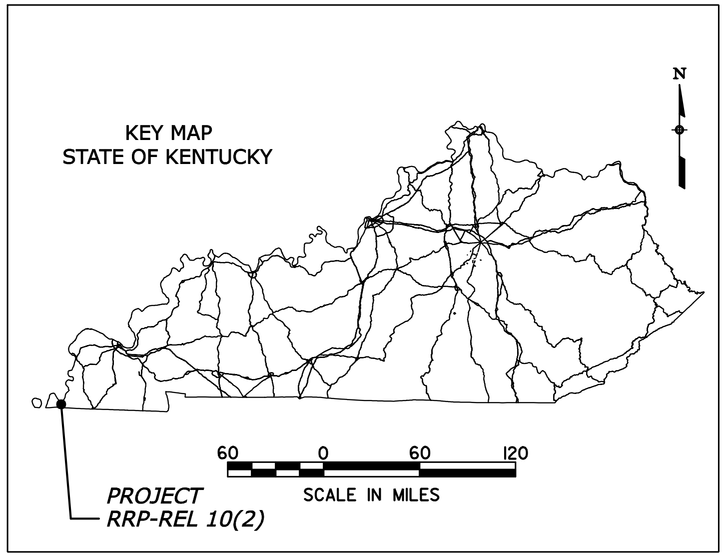
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	KY	RRP-REL 10(2)	A1	65



U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

REELFOOT NATIONAL WILDLIFE REFUGE

PLANS FOR PROPOSED

PROJECT RRP-REL 10(2)

RECONSTRUCTION, REHABILITATION, AND
RESURFACING OF LONG POINT AUTO TOUR ROAD

FULTON COUNTY, KENTUCKY

INDEX TO SHEETS

SHEET NO	DESCRIPTION
A-1	TITLE SHEET
A-2	CONVENTIONAL SYMBOLS AND ABBREVIATIONS
A-3	PROJECT LOCATION MAP
A-4	SURVEY INFORMATION SHEET
B-1	TYPICAL SECTIONS
C-1 to C-5	TABULATION OF QUANTITIES & SUMMARIES
D-1 to D-11	PLAN AND PROFILE SHEETS
M-1	EROSION CONTROL NARRATIVE
M-2	DRAINAGE CROSS SECTIONS
N-1	TEMPORARY TRAFFIC CONTROL PLAN
P-1 to P-3	PERMANENT SIGNING & STRIPING PLANS
S-1 to S-17	STANDARDS & DETAILS
T-1 to T-21	CROSS SECTIONS

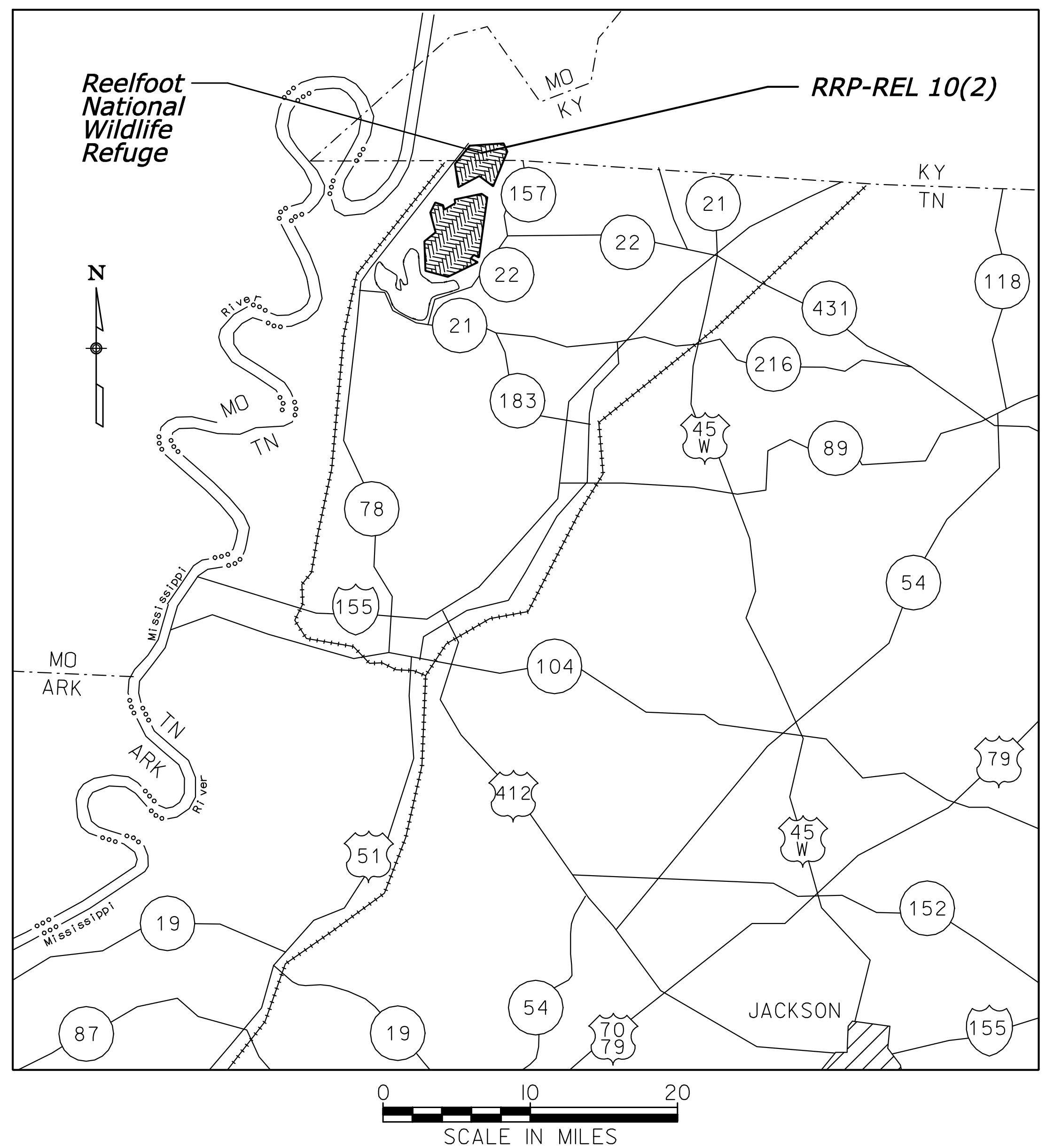
DESCRIPTION OF PROJECT

IMPROVEMENT: RESURFACE WITH 3.5" HACP & AGGREGATE SURFACE COURSE

PROJECT LENGTH: 0.94 Miles

ROAD: 8" aggregate surface course or 3.5" hot asphalt concrete pavement

	WIDTH	TYPE
SURFACE:	Varies	Hot Asphalt Concrete & Aggregate
BASE	Varies	Aggregate
ROADBED	Varies	Existing



Call Kentucky Underground Protection, Inc. prior to digging,
at : 1-800-752-6007, 1-502-266-5677, or 811
Website: http://www.kentucky811.org/

DESIGN DESIGNATION:

ADT (2008)	75
ADT (2028)	100
DHV	15
D	50/50
%Truck	1%
V (MPH)	25
C/A	None
e(max)	6%

SPECIFICATIONS:

"Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects", FP-03 U.S.Customary Units.

PLANS PREPARED BY

U.S. Department of Transportation
Federal Highway Administration

EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA
MARCH, 2008

PROJECT MANAGER	LEAD DESIGNER
ROBERT MORRIS	Y. EYFA

SAMMS # 10016806

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	A-2

Abutment	Abut.
Aggregate	aggr.
Ahead	AH
Alternate	alt.
Average daily traffic	ADT
Back	BK
Balance point	BP
Bearing	brg.
Begining	beg.
Bench mark	BM
Centerline	
Center to center	cc, c-c or c. to c.
Centers	ctrs.
Clear	clr.
Column	col.
Connection	conn.
Construction joint	Constr. jt.
Continuous	cont.
Corrugated metal pipe	CMP
Culvert	culv.
Curve centeral angle (spiral curve transitions)	Δ_c
Curve total angle (curve delta or deflection)	Δ
Design hourly volume	DHV
Design speed	V
Diagonal	diag.
Diameter	D, dia., or
Diaphragm	diaph.
Distance	dist.
Drawing(s)	dwg(s), or drwg(s)
Drop Inlet	DI
East	E
Edge of pavement	EP or EOP
Elevation	elev.
Elevation with number	El. 94.161 [El. 94.16]
Embankment	emb.
End section	ES
Equation	EQ or eq.
Excavation	exc.
Expansion joint	exp. jt.
Finish	fin.
Flange	flg.
Footing	ftg.
Galvanized	galv.
Gage(gauge)	ga.
Headwall	hdwl.
Hexagon	hex.
High water	HW
Inside diameter	ID
Joint	jt.
Lamination	lam.
Latitude	lat.
Left	lt., Lt. or LT
Length of curve(simple curve)	L
Length of curve (spiral curve transision)	Lc
Length of spiral	Ls
Longitudinal(longitude)	long.
Low water	LW
Mainline	M.L.
Material	mati.
Maximum	max.
Mile[Kilometer] post	M.P[K.P.]
Minimum	min.
Monument	mon.
Mechanically stabilized embankment	MSE
Original groung	OG
Out to out	o. to o.
Outside diameter	OD
On centers	o. c.
Normal crown	NC or NCR
North	N
Pavement	pvmt.
Plate	pl.
Point of compound curve	PCC
Point of curve	PC
Point of curve to spiral	PCS or CS
Point of intersection	PI
Point of spiral to curve	PSC or SC
Point of spiral to reverse spiral	SRS
Point of spiral to tangent	PST or ST
Point of tangent	PT
Point of tangent to spiral	PS or TS
Point on curve	POC
Point on spiral	POS
Point on tangent	POT
Radius	R
Range	R.
Reinforcement (reinforced)	reinf.
Required	reqd.
Right	Rt., rt.or RT
Right-of-way	R/W
Roadway	Rdwy.
Route	Rte.
Section	Sec.
South	S
Spacing, spaces or spaced	spa.
Spiral central angle	s
Standard	std.
Station	Sta.
Stiffener	stiff.
Stringer	stgr.
Structure	struc.
Superelevation rate	e
Symmetrical	sym.
Tangent distance (tangent length)	T
Tangent distance (spiral curve transision)	Ts
Temporary benchmark	TBM
Temporary construction easement	TCE
Thread	thd.
Township	T.
Typical	typ.
Vehicle per hour	vph
Vertical point of intersection	VPI
West	W

NATIONAL BOUNDARY

STATE BOUNDARY

COUNTY BOUNDARY

CITY BOUNDARY

TOWNSHIP or RANGE LINE

SECTION LINE

1/4 SECTION LINE

1/16 SECTION LINE

NATIONAL PARK or FOREST BOUNDARY

PROPERTY LINE — P/L

TRAVERSE POINT (Horizontal & Vertical) Top of Triangle Points North — T-45, 2,645.9

TRAVERSE POINT (Horizontal) — T-3

BRASS CAP

STEEL PIN

HUB & TACK

SPOT ELEVATION — x 99.9

COORDINATE GRID TICK

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE	R/W	R/W
RIGHT-OF-WAY LINE with MONUMENT	R/W	R/W
	FOUND	PROJECTED
SECTION CORNER	36 31 1 6	36 31 1 6
1/4 SECTION CORNER	15 22	15 22
1/16 SECTION		
PROPERTY CORNER		No Symbol
PARCEL NUMBER	No Symbol	400
EASEMENT (Permanent - Construction)	P/E	C/E

ROUTE NUMBERS — 26 INTERSTATE; 25 U.S.; 694 STATE

SLOPE STAKE — TOP OF CUT; TOE OF FILL; TRANSITION

ROADWAY, EXISTING

RAILROAD — SINGLE TRACK; MULTIPLE TRACK

TRAIL

INTERMITTENT DRAINAGE/ SMALL CREEK

SPRING

LARGE CREEK/RIVER

LAKE, POND or RESERVOIR; MARSHLAND

PAVEMENT REMOVAL/ROADWAY OBLITERATION

FULL DEPTH PAVEMENT

SIDEWALK ASPHALT/CONCRETE

MILL AND OVERLAY

OVERLAY

AREA PATTERN

SILT FENCE — SF

DIVERSION BERM — DB

DIVERSION CHANNEL

CHECK DAM

RIPRAP/CULVERT RIPRAP

BORING LOCATION — B-1

TEST PIT — TP-1

NORTH ARROW — N

MATERIAL SOURCE

	EXISTING	PROPOSED
FENCE	x x	xx xx
GATE with FENCE	x x	xx xx
CATTLEGUARD		
GUARDRAIL		
MEDIAN & SIDE (CONCRETE) BARRIER		
SIGNS — POST MOUNTED		
SIGNS — PORTABLE	No Symbol	
RETAINING WALL		wall face
OVERHEAD(POWER POLE) UTILITIES P=Electrical for transmission line E=Electrical for distribution line T=Telephone, E&T=Joint Electrical and Telephone FO=Fibre optics	P	P
SUPPORT POLE with ANCHOR		
TELEPHONE BOOTH or PEDESTAL	TB or TP	TB or TP
STREET LIGHT	or	or
UNDERGROUND UTILITIES G=gas, O=oil, P=power, SA=sanitary sewer, SS=storm sewer, T=telephone, W=water E=electrical, FO=fibre optics	W	W
BRIDGE		
PIPE CULVERT (arrow shows flow)		
PIPE CULVERT with END SECTION		
PIPE CULVERT with HEADWALL		
CULVERT with DROP INLET		
BOX CULVERT		
UNDERDRAIN	UD	UD
BUILDING		
TREELINE; TREE		

PROJECT SPECIFIC SYMBOLS AND ABBREVIATIONS:-

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

SYMBOLS AND ABBREVIATIONS

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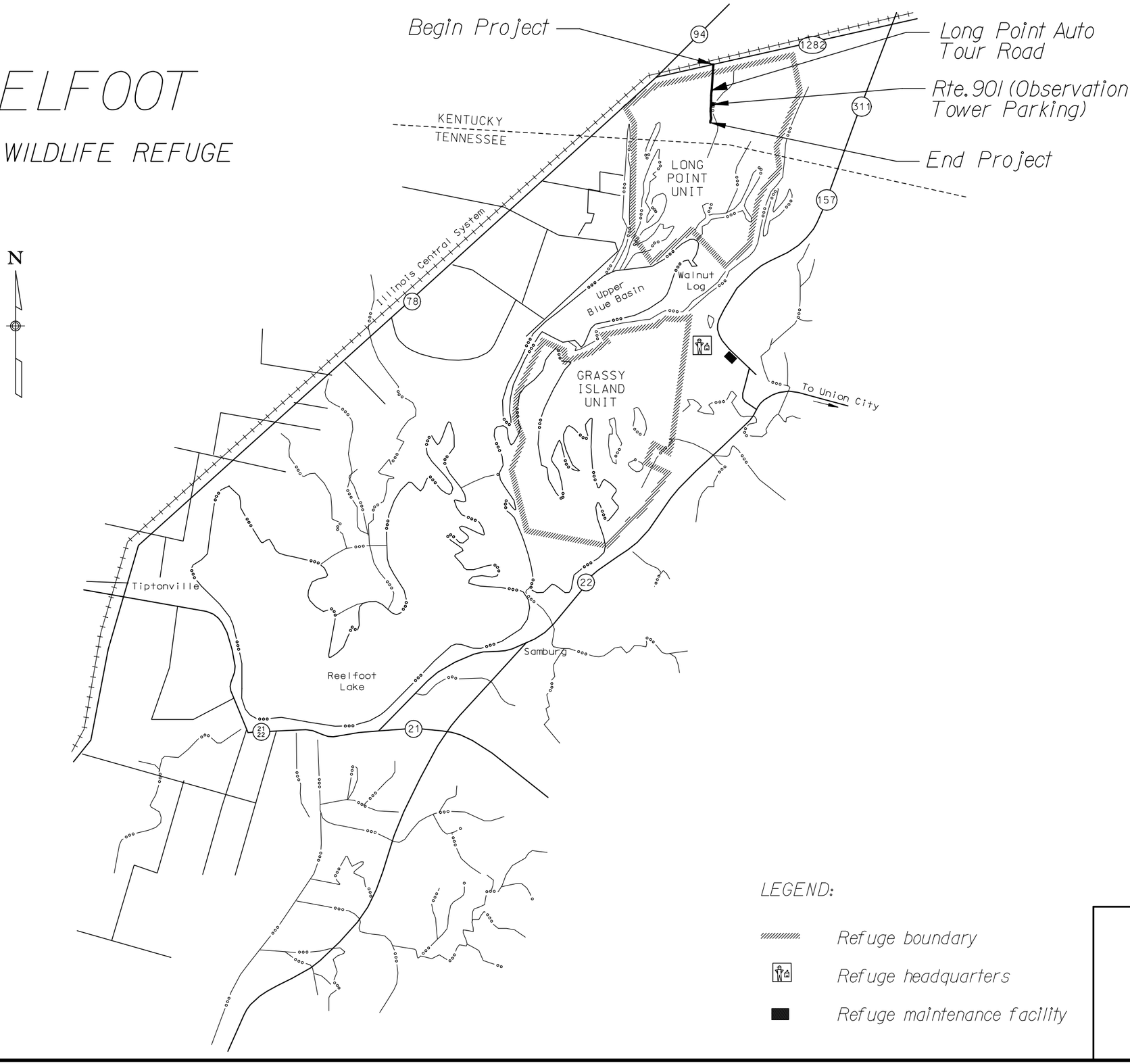
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	A-3

REELFOOT

NATIONAL WILDLIFE REFUGE



LEGEND:

- Refuge boundary
- Refuge headquarters
- Refuge maintenance facility

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

LOCATION MAP

0 2
SCALE IN MILES

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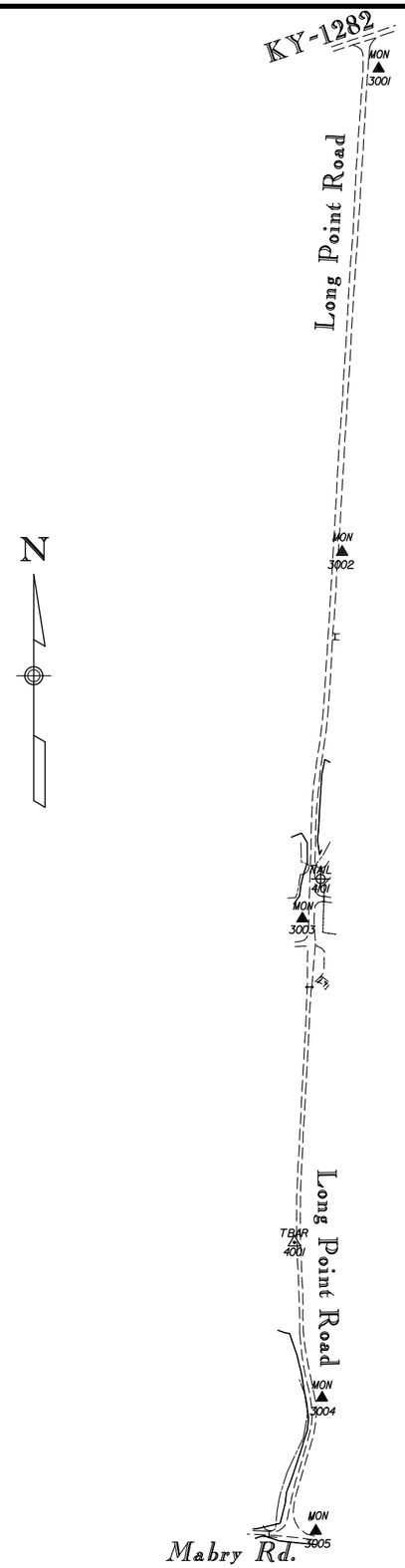
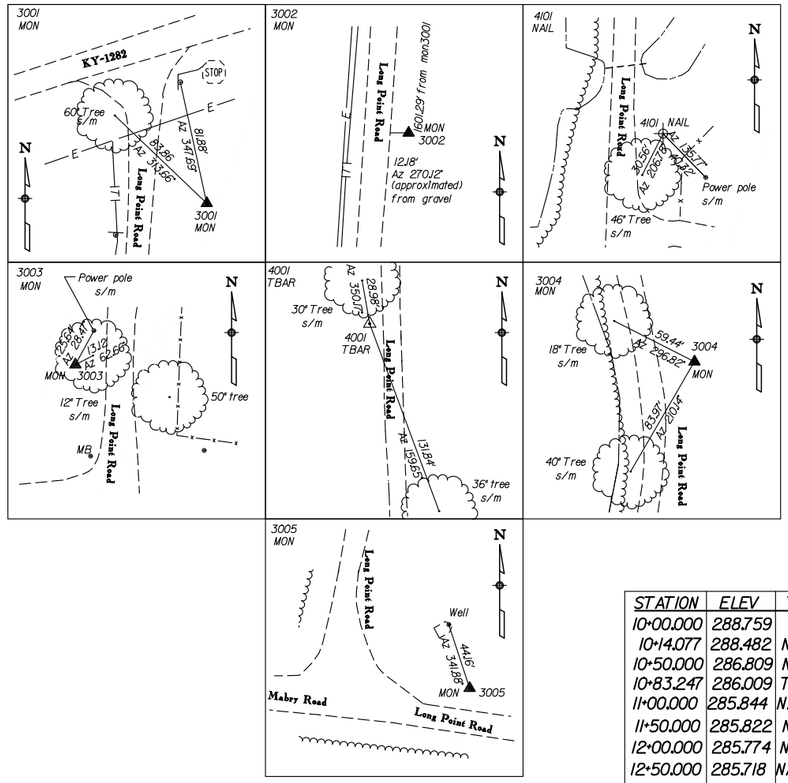
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	A-4





Project Datum
Coorlnate System: US State Plane 1983(at Grid)
Project Datum: NAD 1983 (Conus)
Zone: Tennessee 4100
Coordinates: US survey feet
Ground Scale Factor: .9996222536

PNUM	NORTHING	EASTING	ELEV.	PCODE
3001	813609.303	992977.781	285.346	MON
3002	812012.670	992856.379	284.386	MON
3003	810796.355	992725.439	284.767	MON
3004	809208.700	992790.022	283.126	MON
3005	808767.543	992769.175	284.908	MON
4001	809723.281	992698.259	283.935	TBAR
4101	810927.374	992785.278	284.235	NAIL

Staked centerline data:

STATION	ELEV	TYPE
10+00.000	288.759	NAIL
10+14.077	288.482	NAIL
10+50.000	286.809	NAIL
10+83.247	286.009	TBAR
11+00.000	285.844	NAIL
11+50.000	285.822	NAIL
12+00.000	285.774	NAIL
12+50.000	285.718	NAIL
13+00.000	285.808	NAIL
13+50.000	285.779	NAIL
14+00.000	285.801	NAIL
14+50.000	285.869	NAIL
15+00.000	286.040	NAIL
15+50.000	286.140	NAIL
16+00.000	286.215	NAIL
16+50.000	286.089	NAIL
17+00.000	285.915	NAIL
17+50.000	285.848	NAIL
18+00.000	285.885	NAIL
18+50.000	285.876	NAIL
19+00.000	285.769	NAIL
19+50.000	285.581	NAIL
20+00.000	285.482	NAIL
20+50.000	285.289	NAIL
21+00.000	285.263	NAIL
21+50.000	285.398	NAIL
22+00.000	285.261	NAIL
22+50.000	285.126	NAIL
23+00.000	285.074	NAIL
23+50.000	284.988	NAIL
24+00.000	285.053	NAIL
24+50.000	284.958	NAIL
25+00.000	284.895	NAIL
25+50.000	284.891	NAIL
26+00.000	284.969	NAIL
26+50.000	285.000	NAIL
27+00.000	284.983	NAIL
27+50.000	284.869	NAIL
28+00.000	284.805	NAIL
28+50.000	284.887	NAIL
29+00.000	284.944	NAIL

STATION	ELEV	TYPE
29+50.000	285.045	NAIL
30+00.000	285.049	NAIL
30+50.000	285.031	NAIL
31+00.000	285.042	NAIL
31+50.000	285.026	NAIL
31+95.611	284.906	TBAR
32+50.000	284.959	NAIL
32+81.147	284.950	TBAR
33+00.000	284.952	NAIL
33+50.000	284.899	NAIL
34+00.000	284.654	NAIL
34+01.230	284.660	TBAR
34+50.000	284.733	NAIL
35+00.000	284.807	NAIL
35+50.000	284.742	NAIL
36+00.000	284.882	NAIL
36+50.000	284.962	NAIL
36+66.675	284.932	NAIL
37+00.000	285.034	NAIL
37+50.000	285.224	NAIL
38+00.000	285.259	NAIL
38+50.000	285.526	NAIL
39+00.000	285.585	NAIL
39+50.000	285.450	NAIL
40+00.000	285.505	NAIL
40+50.000	285.372	NAIL
40+65.771	285.280	TBAR
41+00.000	285.127	NAIL
41+50.000	284.883	NAIL
41+92.560	284.696	TBAR
42+00.000	284.683	NAIL
42+50.000	284.666	NAIL
43+00.000	284.728	NAIL
43+50.000	284.747	NAIL
44+00.000	284.674	NAIL
44+50.000	284.512	NAIL
45+00.000	284.477	NAIL
45+50.000	284.478	NAIL
46+00.000	284.430	NAIL
46+50.000	284.510	NAIL
47+00.000	284.686	NAIL
47+39.066	284.852	TBAR
48+00.000	284.849	NAIL

STATION	ELEV	TYPE
48+50.000	284.695	NAIL
49+00.000	284.483	NAIL
49+50.000	284.496	NAIL
50+00.000	284.574	NAIL
50+50.000	284.627	NAIL
50+59.353	284.675	TBAR
51+00.000	284.763	NAIL
51+50.000	284.795	NAIL
52+00.000	284.939	NAIL
52+50.000	284.729	NAIL
53+00.000	284.810	NAIL
53+09.853	284.898	TBAR
53+50.000	285.097	NAIL
54+00.000	285.188	NAIL
54+04.221	285.206	TBAR
54+50.000	285.206	NAIL
55+00.000	285.069	NAIL
55+14.709	285.009	TBAR
55+50.000	285.042	NAIL
56+00.000	284.927	NAIL
56+50.000	284.945	NAIL
56+61.006	284.955	TBAR
57+00.000	284.896	NAIL
57+50.000	284.867	NAIL
58+00.000	284.916	NAIL
58+25.875	284.899	TBAR
58+50.000	284.942	NAIL
59+00.000	285.149	NAIL
59+07.827	285.205	TBAR
59+50.000	285.165	NAIL
59+74.305	284.905	NAIL

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

SURVEY INFORMATION

LONG POINT AUTO TOUR ROAD

0 250 500
SCALE IN FEET

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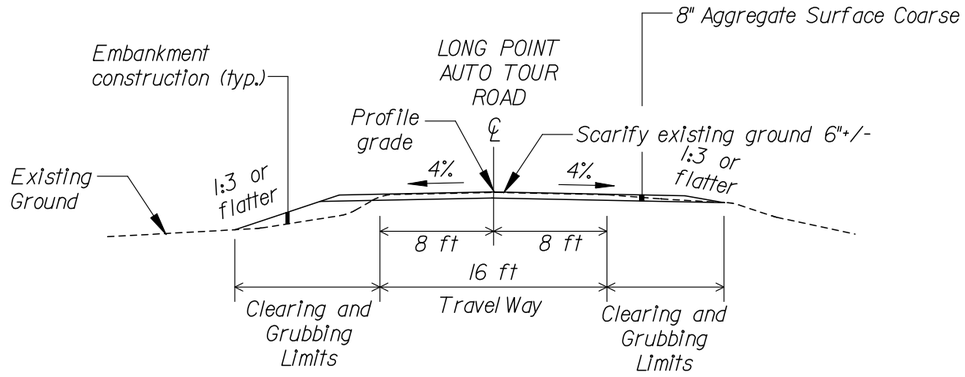
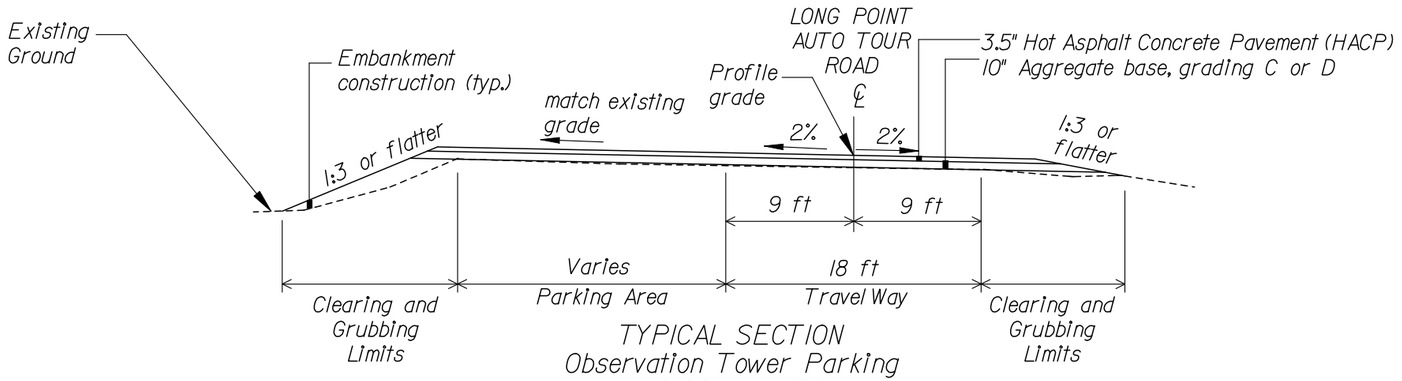
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	B-1

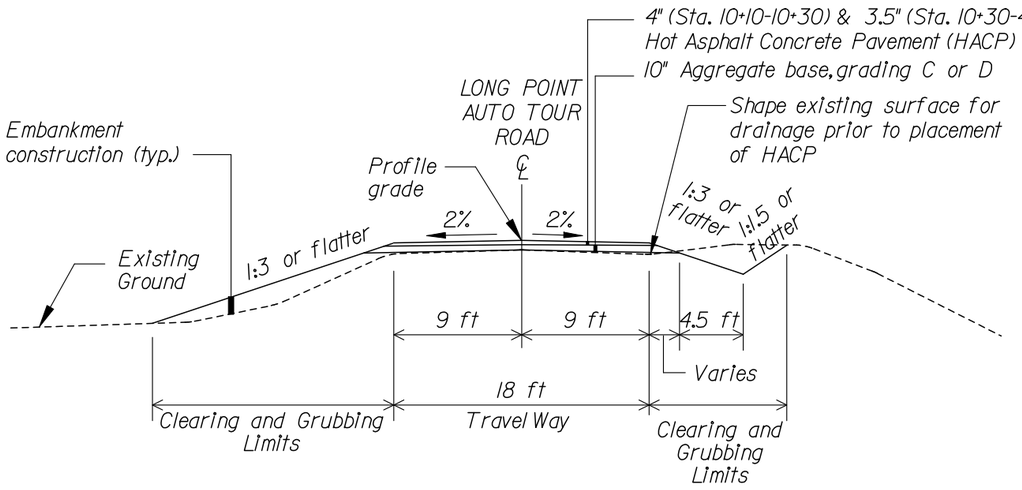
1. Place topsoil, 4-inch depth, and turf establishment on all disturbed areas except for paved areas.



TYPICAL GRAVEL SECTION
41+50 TO 59+74.30
LONG POINT AUTO TOUR ROAD



TYPICAL SECTION
Observation Tower Parking
40+00 to 41+50
(Long Point Auto Tour Road Right)



TYPICAL PAVEMENT SECTION
10+10 TO STA 40+00
LONG POINT AUTO TOUR ROAD

Not to Scale

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

TYPICAL SECTIONS

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	C-1

PLAN SHEET SECTION -------->>			ESTIMATED QUANTITIES	
ITEM	DESCRIPTION	UNIT	PLAN	BID SCHEDULE
15101-0000	MOBILIZATION	LPSM	ALL	ALL
15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM	ALL	ALL
15401-0000	CONTRACTOR TESTING	LPSM	ALL	ALL
15705-0100	SOIL EROSION CONTROL, SILT FENCE	LNFT	7350	7,350
15705-1300	SOIL EROSION CONTROL, TEMPORARY DIVERSION CHANNEL	LNFT	100	100
20101-0000	CLEARING AND GRUBBING	ACRE	2.2	2.2
20220-1000	REMOVAL, INDIVIDUAL TREE	EACH	10	10
20301-0100	REMOVAL OF BOLLARD	EACH	18	18
20301-1100	REMOVAL OF GATE	EACH	1	1
20301-2400	REMOVAL OF SIGN	EACH	3	3
20302-2100	REMOVAL OF PIPE CULVERT	LNFT	60	60
20402-0000	SUBEXCAVATION	CUYD	100	100
20420-0000	EMBANKMENT CONSTRUCTION	CUYD	3100	3,100
25101-3000	PLACED RIPRAP, CLASS 3	CUYD	18	18
30101-4000	AGGREGATE BASE GRADING C OR D	TON	4070	4,070
30110-0000	AGGREGATE SURFACE COURSE	TON	1935	1,935
40301-0000	HOT ASPHALT CONCRETE PAVEMENT	TON	1475	1,475
60103-2020	CONCRETE, HEADWALL FOR 54-INCH EQUIVALENT DIAMETER PIPE CULVERT	EACH	2	2
60202-0400	24-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT (ELLIPTICAL)	LNFT	26	26
60202-0900	54-INCH EQUIVALENT DIAMETER ARCH OR ELLIPTICAL PIPE CULVERT (ELLIPTICAL)	LNFT	34	34
60915-1000	WHEELSTOP, CONCRETE	EACH	5	5
61902-2100	GATE, METAL, 30 FEET WIDTH	EACH	1	1
62402-0300	FURNISHING AND PLACING TOPSOIL, 4-INCH DEPTH	ACRE	2.5	2.5
62501-0000	TURF ESTABLISHMENT	ACRE	2.5	2.5
63304-0900	SIGNS, ALUMINUM PANELS, TYPE 3 SHEETING	SQFT	26	26
63401-1500	PAVEMENT MARKINGS, TYPE H, SOLID	LNFT	7700	7,700
63401-1600	PAVEMENT MARKINGS, TYPE H, BROKEN	LNFT	2700	2,700
63405-3250	PAVEMENT MARKINGS, TYPE H, ACCESSIBILITY SYMBOL	EACH	1	1
63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	EACH	4	4
63502-0800	TEMPORARY TRAFFIC CONTROL, CONE, TYPE 18-INCH	EACH	20	20
63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT	156	156
63506-0500	TEMPORARY TRAFFIC CONTROL, FLAGGER	HOUR	100	100
63701-0000	FIELD OFFICE	EACH	1	1
64502-0000	LOCATE UTILITIES	EACH	2	2

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

TABULATION OF QUANTITIES

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	C-2

LOCATION (Sta.)	Lt.	Rt.	20220-1000 Removal, individual tree (each)	20301-0100 Removal of bollard (each)	20301-1100 Removal of gate (each)	20301-2400 Removal of sign (each)	60915-1000 Wheelstop, concrete (each)	61902-2100 Gate, metal, 30-foot width (each)	63502-0600 Temporary traffic control, barricade type 3 (each)	64502-0000 Locate utilities (each)	Remarks
Long Point Auto Tour Road											
10+25	x					1					See Sheet P-1
10+50	x	x							2		See Sheet N-1
11+25		x				1					See Sheet P-1
37+00		x	3								See Sheet D-6
37+50		x								1	See Sheet D-6
38+25	x		1								See Sheet D-6
Observation Tower PA											
40+00 to 41+00	x			18		1	5				See Sheet D-11 & P-3
40+00	x	x								1	See Sheet D-6
41+50	x	x			1			1			See Sheet D-6
51+25	x		1								See Sheet D-8
54+90		x	1								See Sheet D-9
55+90		x	1								See Sheet D-9
56+90	x		1								See Sheet D-9
59+00	x	x							2		See Sheet N-1
Subtotal Schedule A			**8**	**18**	**1**	**3**	**5**	**1**	**4**	**2**	
As directed			**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Total Schedule A			**10**	**18**	**1**	**3**	**5**	**1**	**4**	**2**	

LOCATION (station to station)	Lt.	Rt.	20402-0000 Subexcavation (cuyd)	20420-0000 Embankment construction (cuyd)	30101-4000 Aggregate base, grading C or D (tons)	30110-0000 Aggregate surface course (tons)	40301-0000 Hot asphalt concrete pavement (tons)
Long Point Auto Tour Road							
10+00 to 41+50				1360	3426		1240
Observation Tower Parking	x				276		100
41+50 to 59+74.3				1712		1760	
Subtotal			**0**	**3072**	**3702**	**1760**	**1340**
As directed by the CO			**100**	**28**	**368**	**175**	**135**
Total			**100**	**3100**	**4070**	**1935**	**1475**

LOCATION Station to Station	Lt.	Rt.	15705-0100 Soil erosion control, silt fence (LNFT)	15705-1300 Soil erosion control, temp. divers. channel (LNFT)	Remarks
Long Point Auto Tour Road					
10+00 to 14+50	x		461		see sheet D-1
14+50 to 20+00	x		551		see sheet D-2
20+00 to 25+50	x		551		see sheet D-3
25+50 to 29+73	x		425		see sheet D-4
30+00 to 31+00	x		101		see sheet D-4
31+00 to 36+50	x		551		see sheet D-5
36+50 to 38+50	x		196		see sheet D-6
37+20 to 37+40	x	x	113	100	see sheet D-6
38+50 to 40+00		x	263		see sheet D-6
38+70 to 41+20	x		273		see sheet D-6
40+20 to 42+00		x	188		see sheet D-6
41+30 to 42+00	x		69		see sheet D-6
42+00 to 47+50	x		550		see sheet D-7
42+00 to 47+50		x	551		see sheet D-7
47+50 to 53+00	x		550		see sheet D-8
47+50 to 53+00		x	553		see sheet D-8
53+00 to 58+50	x		558		see sheet D-9
53+00 to 58+50		x	545		see sheet D-9
58+50 to 59+74	x		146		see sheet D-10
58+50 to 59+74		x	142		see sheet D-10
Subtotal Schedule A			**7337**	**100**	
As directed			**13**	**0**	
Total Schedule A			**7350**	**100**	

LOCATION STA. TO STA.	SIDE LT	C	RT	63401-1500 Pavement markings, Type H, solid (LNFT)	63401-1600 Pavement markings, Type H, broken (LNFT)	63405-3250 Pav't markings, Type H, accessibility symbol (EACH)	REMARKS
Long Point Auto Tour Road							
10+00 to 41+50	X		X	6300			Single Solid White edgelines, see sheet P-1
10+14 to 11+50		X		272			Double Solid Yellow centerline, see sheet P-1
10+30 to 10+30	X			39			Solid White stop bar, 12-inch wide, see sheet P-1
11+50 to 37+94		X			2644		Single Broken Yellow centerline, see sheets P-1 - P-3
37+94 to 41+50		X		712			Double Solid Yellow centerline, see sheet P-3
Observation Tower PA							
	X			80		1	4 white parking stall stripes, 4" wide, 20' long, see sheet D-11
	X			294			white gore striping, see sheet D-11
SCHEDULE A SUBTOTAL				**7697**	**2644**	**1**	
AS DIRECTED				**3**	**56**	**0**	
SCHEDULE A TOTAL				**7700**	**2700**	**1**	

LOCATION (Sta.)	20302-2100 Removal of pipe culvert (LNFT)	25101-3000 Placed riprap, class 3 (CUYD)	60103-2020 Conc., HW for 54" equiv. diam. pipe (each)	60202-0400 24" eq. dia. arch or elliptical Pipe Culvert (elliptical) (LNFT)	60202-0900 54" eq. dia. arch or elliptical Pipe Culvert (elliptical) (LNFT)	Remarks
Long Point Auto Tour Road						
29+86	21			26		see sheets D-4 & M-2
37+49.37	30	18	2		34	see sheets D-6 & M-2
Subtotal Schedule A	**51**	**18**	**2**	**26**	**34**	**0**
As directed	**9**	**0**	**0**	**0**	**0**	**0**
Total Schedule A	**60**	**18**	**2**	**26**	**34**	**0**

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

SUMMARIES AND SCHEDULES

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	C-3

Sign No.	Text No.	Sign Text	LOCATION		PANEL SIZE						TEXT SIZE				Color Combination	Quantity	Total Area (sq ft)	Remarks
			Station	Side	Width (in.)	Height (in.)	Area (sq ft)	Corner Radii (in.)	Border Width (in.)	Margin Width (in.)	Numbers (in.)	Upper Case (in.)	Lower Case (in.)	Series				
1	R7-8		See Note 2		12	18	1.50	←			See Note 1			→	Green and Blue on White	1	1.50	
2	R1-1		See Note 2		30	30	6.25	←			See Note 1			→	White on Red	1	6.25	
3	R2-1		See Note 2		24	30	5.00	←			See Note 1			→	Black on White	1	5.00	
4	OM-3R		See Note 2		12	36	3.00	←			See Note 1			→	Black on Yellow	2	6.00	
5	OM-3L		See Note 2		12	36	3.00	←			See Note 1			→	Black on Yellow	2	6.00	
6	R7-8b		See Note 2		12	6	0.50	←			See Note 1			→	White on Blue	1	0.50	Mount under R7-8 sign
															TOTAL		25.25	
															ROUNDED		26	

NOTES:

1. Construct and erect all signs in accordance with the "Manual On Uniform Traffic Control Devices (MUTCD)", latest edition.
2. See Permanent Signing & Striping Plans for sign locations.
3. Sign supports will not be measured for payment and shall be in accordance with Det. E633-01 & E633-2A.

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FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PERMANENT SIGN SCHEDULE

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	C-4

Sign No.	Text No.	Sign Text	LOCATION		PANEL SIZE						TEXT SIZE				Color Combination	Quantity	Total Area (sq ft)	Remarks
			Station	Side	Width (in.)	Height (in.)	Area (sq ft)	Corner Radii (in.)	Border Width (in.)	Margin Width (in.)	Numbers (in.)	Upper Case (in.)	Lower Case (in.)	Series				
1	G20-2	END ROAD WORK			36	18	4.50	←			See Note 1			→	Black on Orange	2	9.00	
2	R11-4	ROAD CLOSED TO THRU TRAFFIC			60	30	12.50	←			See Note 1			→	Black on White	2	25.00	Mount on Type III barricade
3	W13-1	15 M.P.H.			24	24	4.00	←			See Note 1			→	Black on Orange	2	8.00	See STD. 635-6, mount under W20-4 sign
4	W13-1	15 M.P.H.			18	18	2.25	←			See Note 1			→	Black on Orange	1	2.25	See STD. 635-10, mount under W21-5 sign
5	W16-2	500 FEET			24	18	3.00	←			See Note 1			→	Black on Orange	2	6.00	See STD. 635-6
6	W20-1	ROAD WORK AHEAD			36	36	9.00	←			See Note 1			→	Black on Orange	2	18.00	See STD. 635-6 & 635-10
7	W20-1	ROAD WORK 1000 FT			36	36	9.00	←			See Note 1			→	Black on Orange	2	18.00	
8	W20-1	ROAD WORK 500 FT			36	36	9.00	←			See Note 1			→	Black on Orange	2	18.00	
															SUBTOTAL		104.25	

NOTES:

1. Construct and erect all signs in accordance with the "Manual On Uniform Traffic Control Devices (MUTCD)", latest edition.
2. See Traffic Control Plan for sign locations. Actual location of the signs will be directed by the CO.
3. Sign supports will not be measured for payment and shall be in accordance with Det. E635-01.

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FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CONSTRUCTION SIGN SCHEDULE

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	C-5

Sign No.	Text No.	Sign Text	LOCATION		PANEL SIZE						TEXT SIZE				Color Combination	Quantity	Total Area (sq ft)	Remarks
			Station	Side	Width (in.)	Height (in.)	Area (sq ft)	Corner Radii (in.)	Border Width (in.)	Margin Width (in.)	Numbers (in.)	Upper Case (in.)	Lower Case (in.)	Series				
9	W20-4				36	36	9.00	←			See Note 1			→	Black on Orange	2	18.00	See STD. 635-6
10	W20-7A				36	36	9.00	←			See Note 1			→	Black on Orange	2	18.00	See STD.635-6
11	W21-5				30	30	6.25	←			See Note 1			→	Black on Orange	1	6.25	See STD.635-10
12	W21-1a				36	36	9.00	←			See Note 1			→	Black on Orange	1	9.00	See STD.635-10

NOTES:

1. Construct and erect all signs in accordance with the "Manual On Uniform Traffic Control Devices (MUTCD)", latest edition.
2. See Traffic Control Plan for sign locations. Actual location of the signs will be directed by the CO.
3. Sign supports will not be measured for payment and shall be in accordance with Det. E635-01.

SUBTOTAL	51.25
TOTAL	155.5
ROUNDED TOTAL	156

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

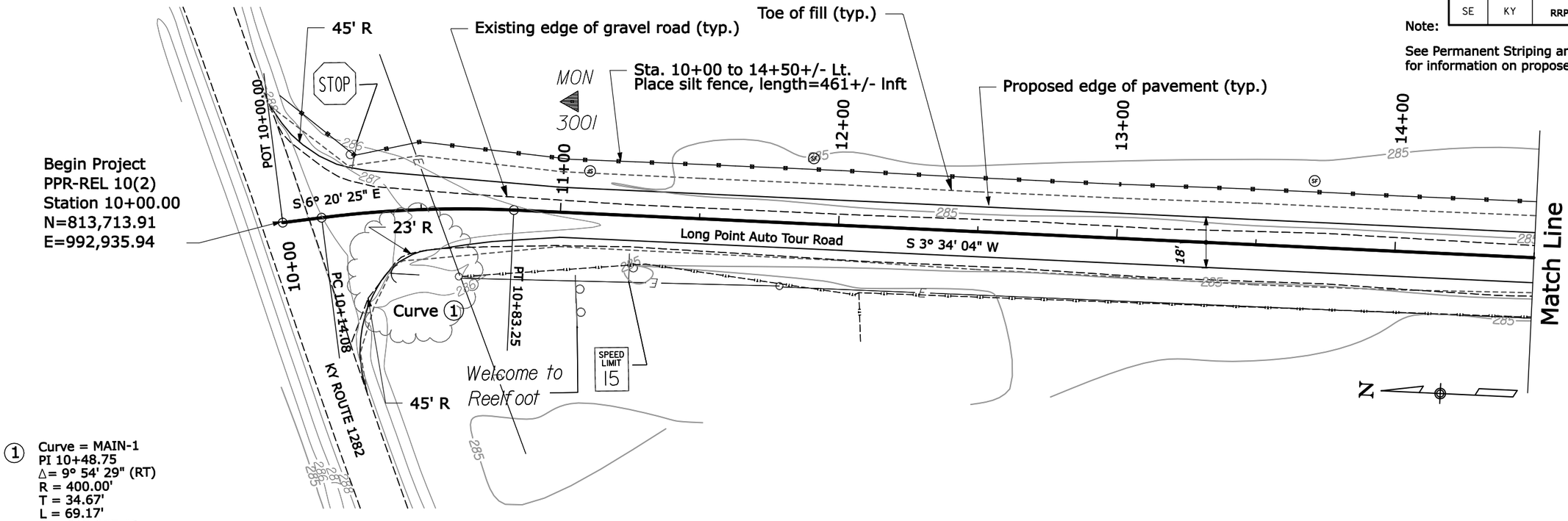
REELFOOT NATIONAL WILDLIFE REFUGE

CONSTRUCTION SIGN SCHEDULE

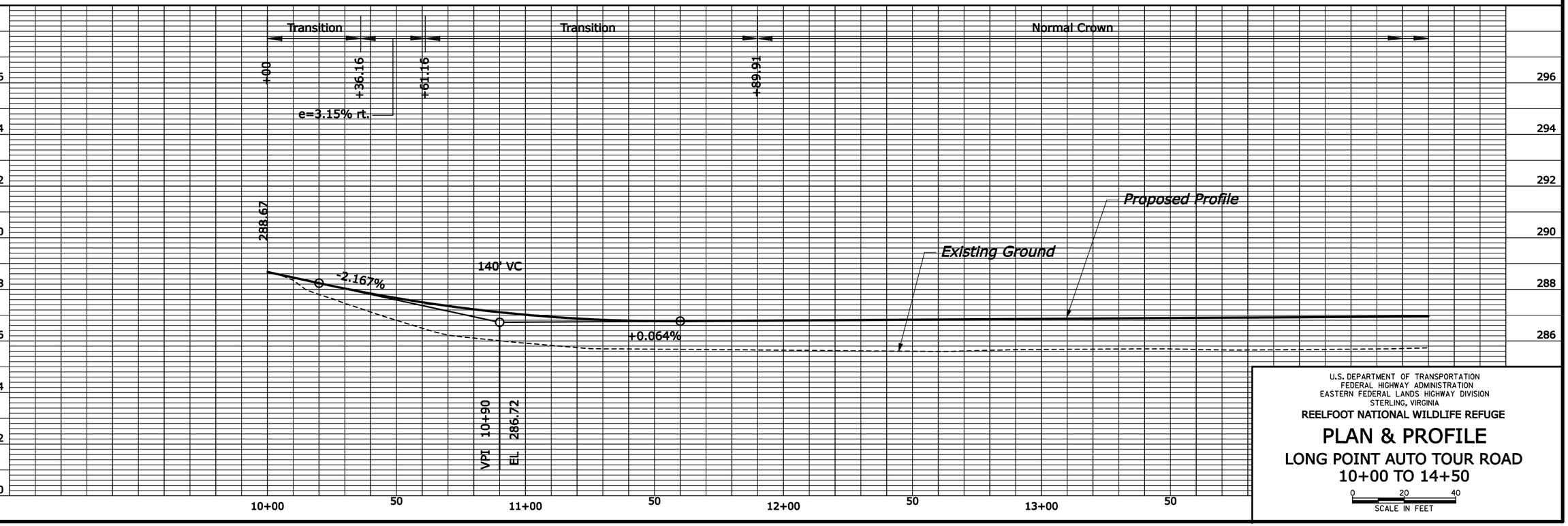
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-1

Note:

See Permanent Striping and Signing Plans for information on proposed sign locations.



1 Curve = MAIN-1
PI 10+48.75
Δ= 9° 54' 29" (RT)
R = 400.00'
T = 34.67'
L = 69.17'
N = 813,665.46
E = 992,941.33



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STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
10+00 TO 14+50

0 20 40
SCALE IN FEET

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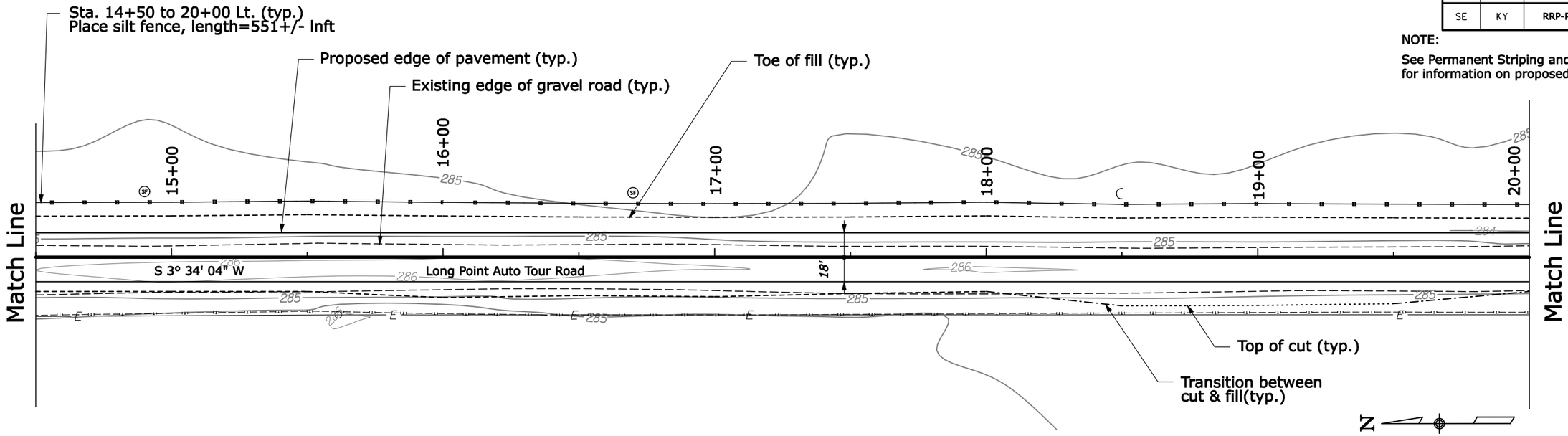
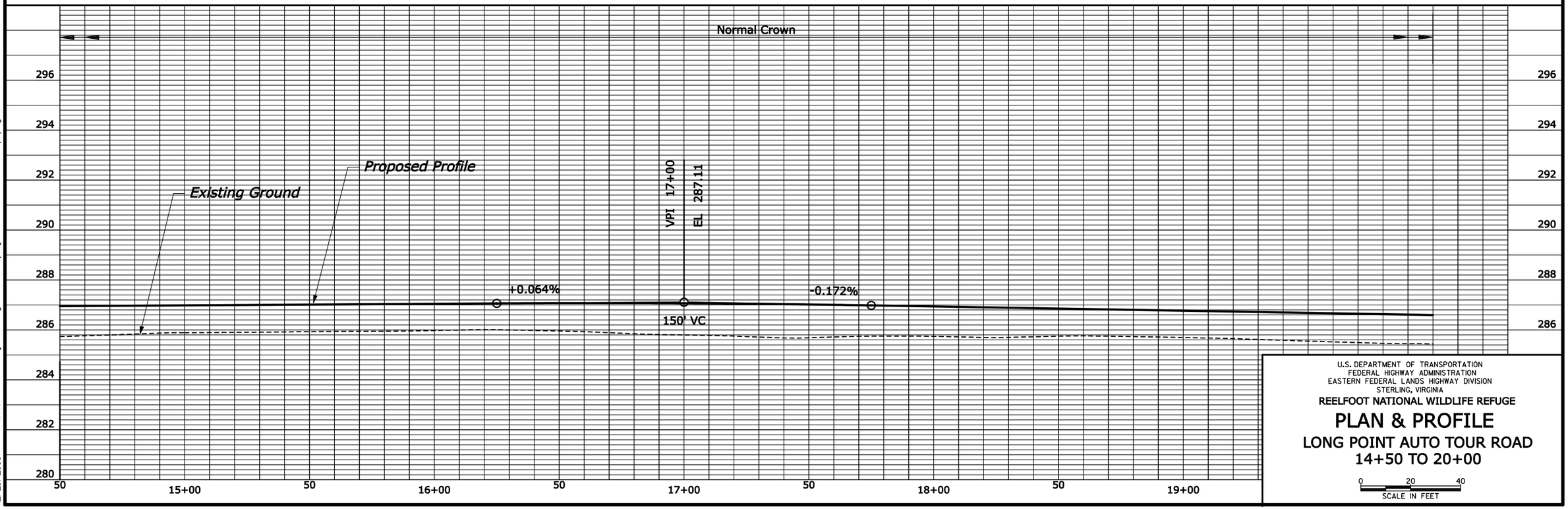
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-2

NOTE:

See Permanent Striping and Signing Plans for information on proposed sign locations.





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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
14+50 TO 20+00

0 20 40
SCALE IN FEET

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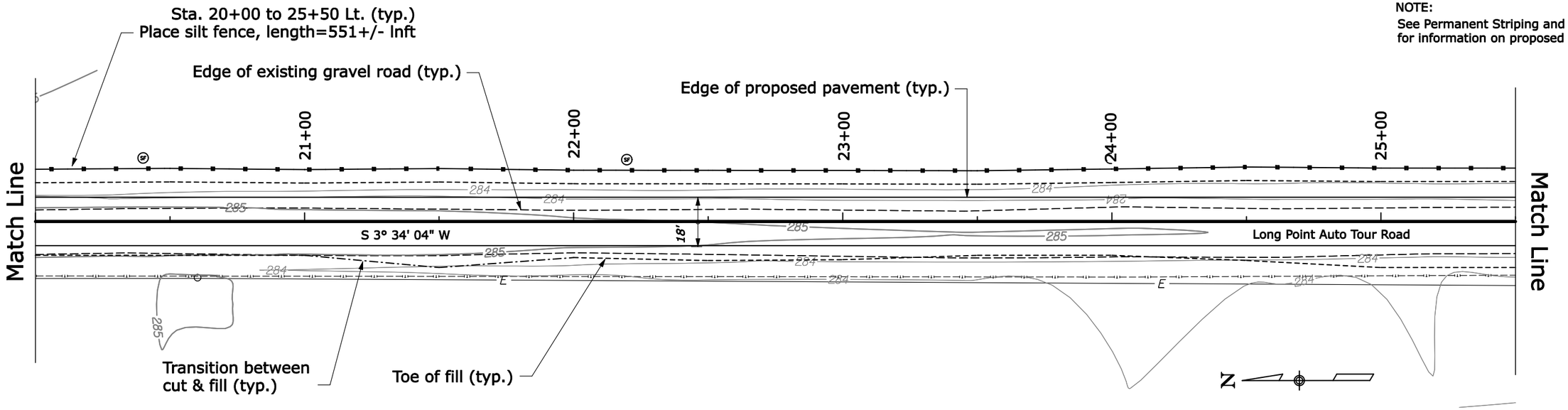
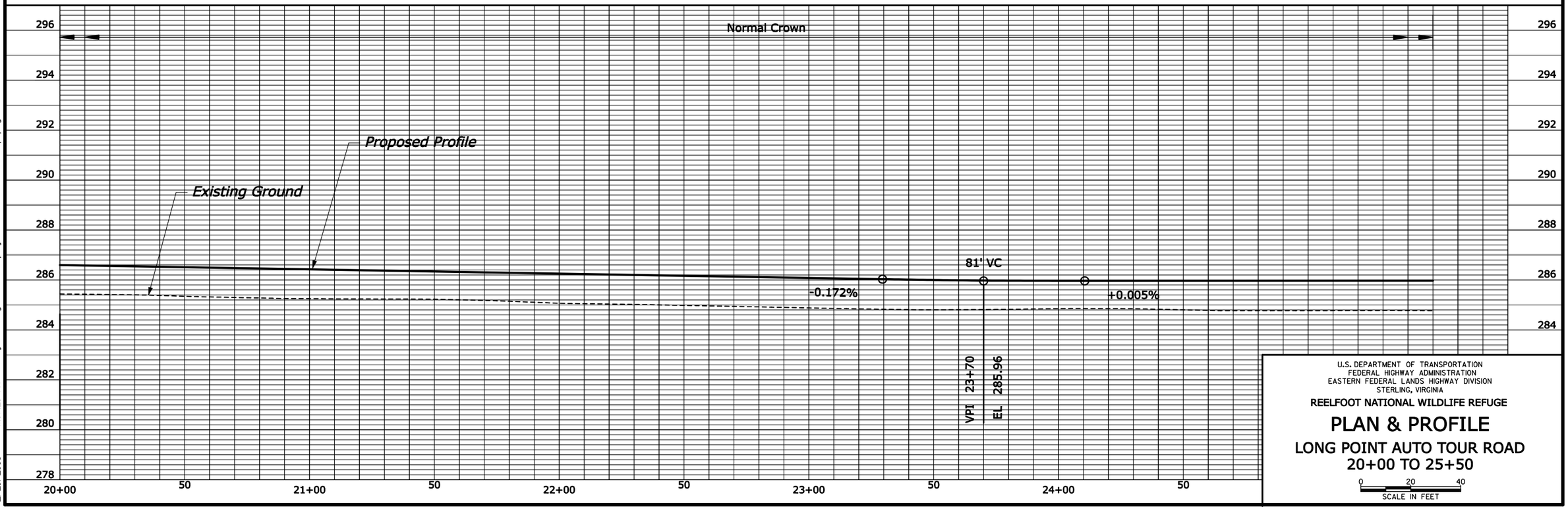
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-3

NOTE:
See Permanent Striping and Signing Plans for information on proposed sign locations.





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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
20+00 TO 25+50

0 20 40
SCALE IN FEET

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-4

Sta. 25+50 to 29+73 Lt. (typ.)
Place silt fence, length=425+/- lnft

Toe of fill (typ.)

Remove 24"x22+/- lnft pipe culvert,
Install 24" equvalent diameter elliptical
pipe culvert, length=26+/- lnft

Existing edge of gravel road (typ.)

Sta. 30+00 to 31+00 Lt. (typ.)
Place silt fence, length=101+/- lnft

NOTE:
See Permanent Striping and Signing Plans for information on proposed sign locations.

Match Line

26+00 27+00 28+00 29+00 30+00 31+00

MON
3002

24"X20.90'CMP
FL 279.38'
FL 280.36'

S 3° 34' 04" W

18'

Long Point Auto Tour Road

Match Line

Proposed edge of pavement (typ.)

Transition between cut & fill (typ.)

Top of cut (typ.)

N

Normal Crown

Transition

+68.11

Proposed Profile

Existing Ground

+0.005%

296 294 292 290 288 286 284 282 280 278

50 26+00 50 27+00 50 28+00 50 29+00 50 30+00

U.S. DEPARTMENT OF TRANSPORTATION
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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
25+50 TO 31+00

0 20 40
SCALE IN FEET

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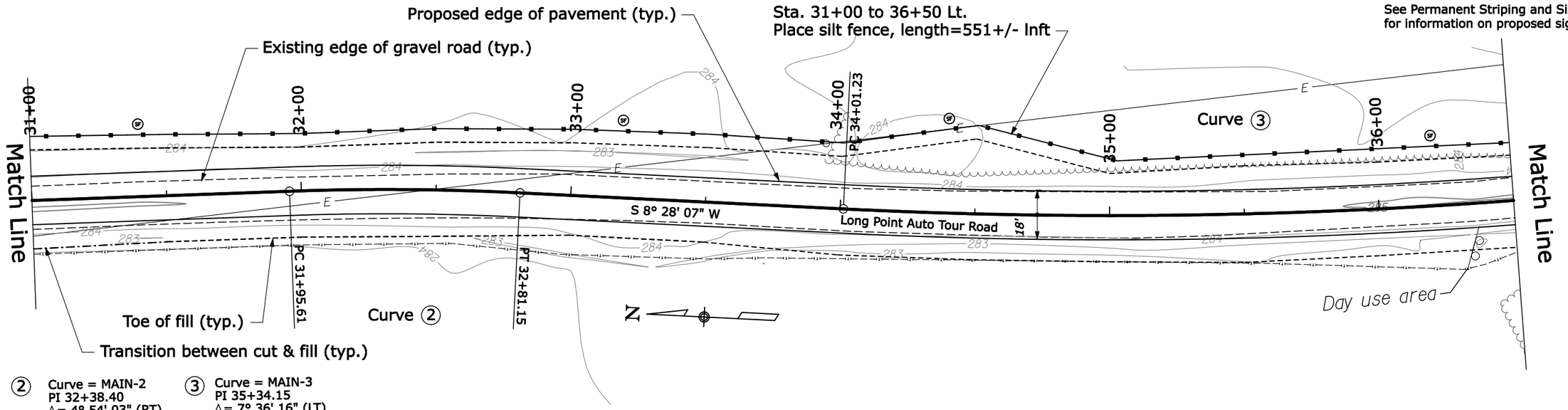
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-5

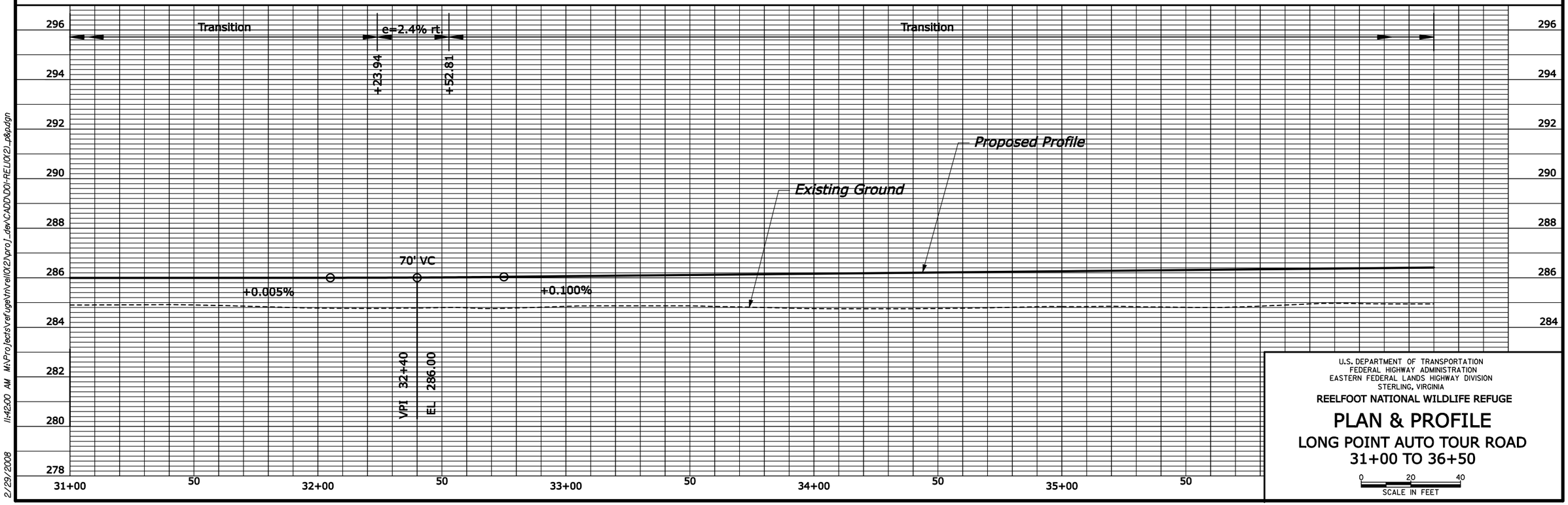
NOTE:

See Permanent Striping and Signing Plans for information on proposed sign locations.



② Curve = MAIN-2
PI 32+38.40
Δ= 4° 54' 03" (RT)
R = 1,000.00'
T = 42.79'
L = 85.54'
N = 811,479.88
E = 992,805.06

③ Curve = MAIN-3
PI 35+34.15
Δ= 7° 36' 16" (LT)
R = 2,000.00'
T = 132.92'
L = 265.44'
N = 811,187.31
E = 992,761.49



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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
31+00 TO 36+50

0 20 40
SCALE IN FEET

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-6

NOTE:
See Permanent Striping and Signing Plans for information on proposed sign locations.

Sta. 36+50 to 38+50 Lt.
Place silt fence, length=196 lnft

Transition between cut & fill (typ.)

Pave Apron of Existing Driveway

Remove Tree

Observation Tower
Parking Lot (RTE 901)
See Plan on Sheet D-11

Sta. 38+70 to 41+20 Lt.
Place silt fence, length=273 lnft

Parking

Parking

Remove existing gate,
Install metal gate, width=30'

Sta. 41+30 to 42+00 Lt.
Place silt fence, length=69 lnft

Toe of fill (typ.)

Match Line

PT 36+66.67

37+00

FL 277.439

48"x29"CMP

38+00

NAIL
4101

15'R

15'

39+00

23'R

40+00

41+00

42+00

S 0° 51' 51" W

Long Point Auto Tour Road

15'R (typ.)

17'

18'

16'

STA 41+00

STA 41+20

PC 40+65.77

PT 41+92.56

Match Line

Curve ④

Remove 3 Trees

Sta. 37+20 - 37+40+/- Construct temporary diversion channel, length=100+/- lnft, place silt fence around channel, length=113+/- lnft (See Det. 157-5A)

FL 279.69

Locate existing underground telephone line
Protect line during pipe culvert replacement
Re-bury line with a minimum 18" cover

MON
3003

Sta. 38+50 to 40+00 Rt.
Place silt fence, length=263 lnft

STA 41+50
End Asphalt pavement section
Begin aggregate surface course section

Proposed edge of pavement (typ.)

Pave Apron of Existing Driveway

Sta. 40+20 to 42+00 Rt.
Place silt fence, length=188 lnft

Sta. 40+00+/- Locate an underground water line & protect during construction

Existing edge of gravel road (typ.)

Proposed edge of gravel road (typ.)

④ Curve = MAIN-4
PI 41+29.17
Δ= 2° 25' 17" (RT)
R = 3,000.00'
T = 63.40'
L = 126.79'
N = 810,591.96
E = 992,752.51

Remove existing 48"x30+/- lnft pipe culvert
Install 54" equivalent diameter elliptical pipe culvert, length=34.0+/- lnft, invert elevations Lt. 277.47' Rt. 279.71'
Construct concrete headwalls, Lt. & Rt.

Transition

Normal Crown

+01.60

Proposed Profile

Existing Ground

VPI 40+00
EL 286.76

+0.100%

-0.496%

201' VC

Existing 48"x30+/- lnft CMP
Proposed 54"x34+/- lnft equiv. dia. elliptical PC +49

294
292
290
288
286
284
282
280
278

296
294
292
290
288
286

50 37+00 50 38+00 50 39+00 50 40+00 50 41+00

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EASTERN FEDERAL LANDS HIGHWAY DIVISION
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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
36+50 TO 42+00

0 20 40
SCALE IN FEET

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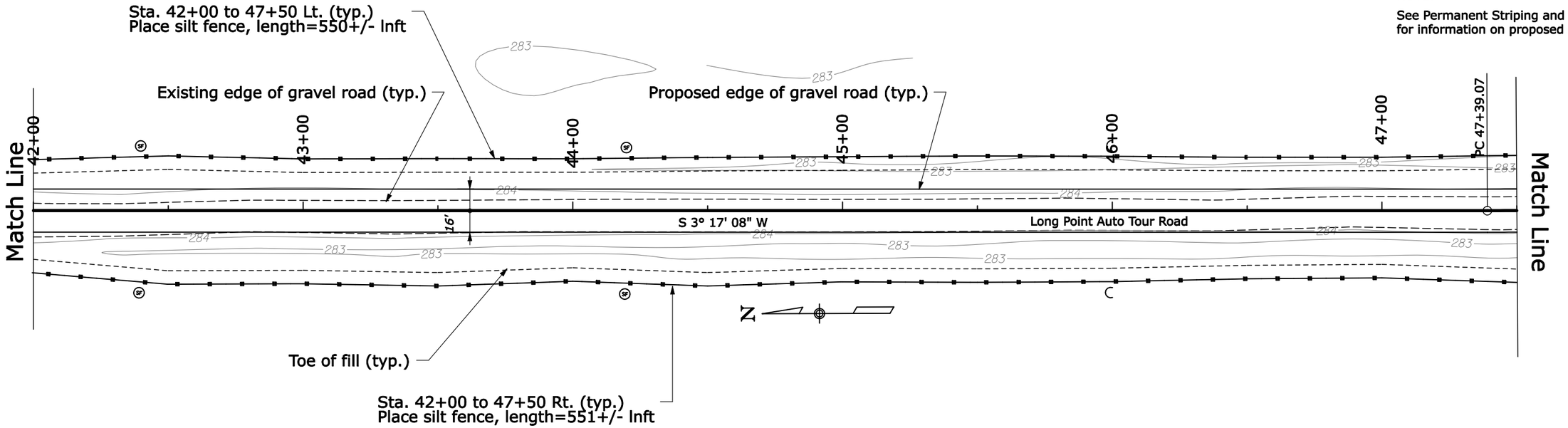
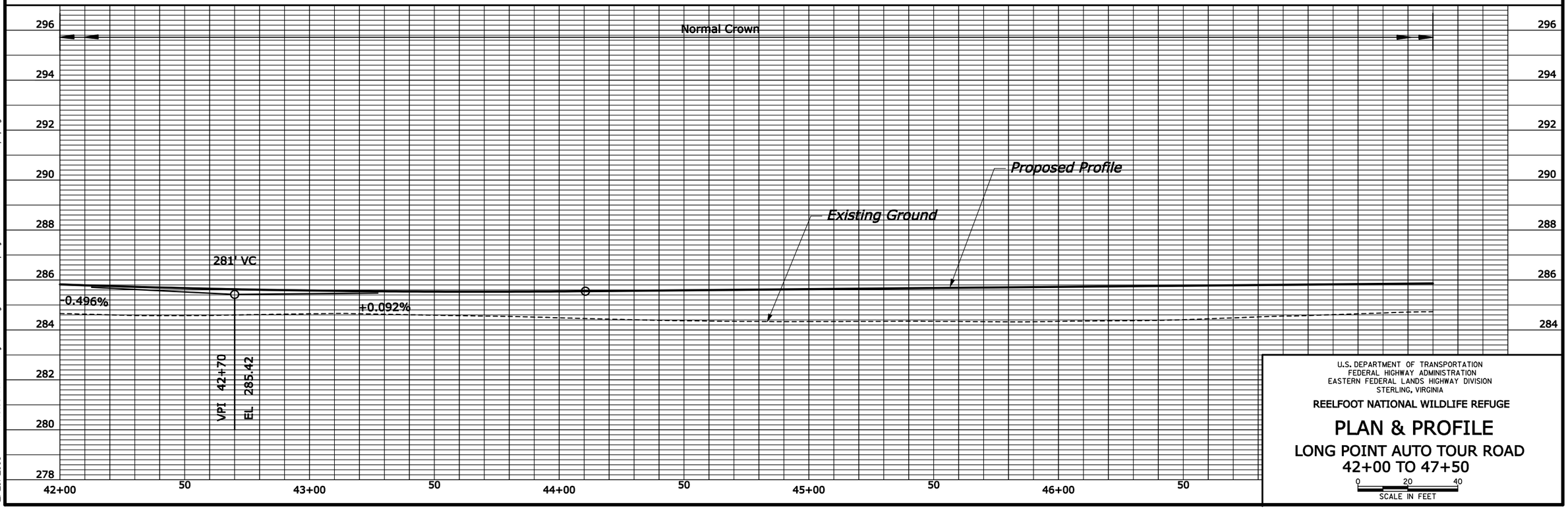
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-7

NOTE:

See Permanent Striping and Signing Plans for information on proposed sign locations.





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REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
42+00 TO 47+50

0 20 40
SCALE IN FEET

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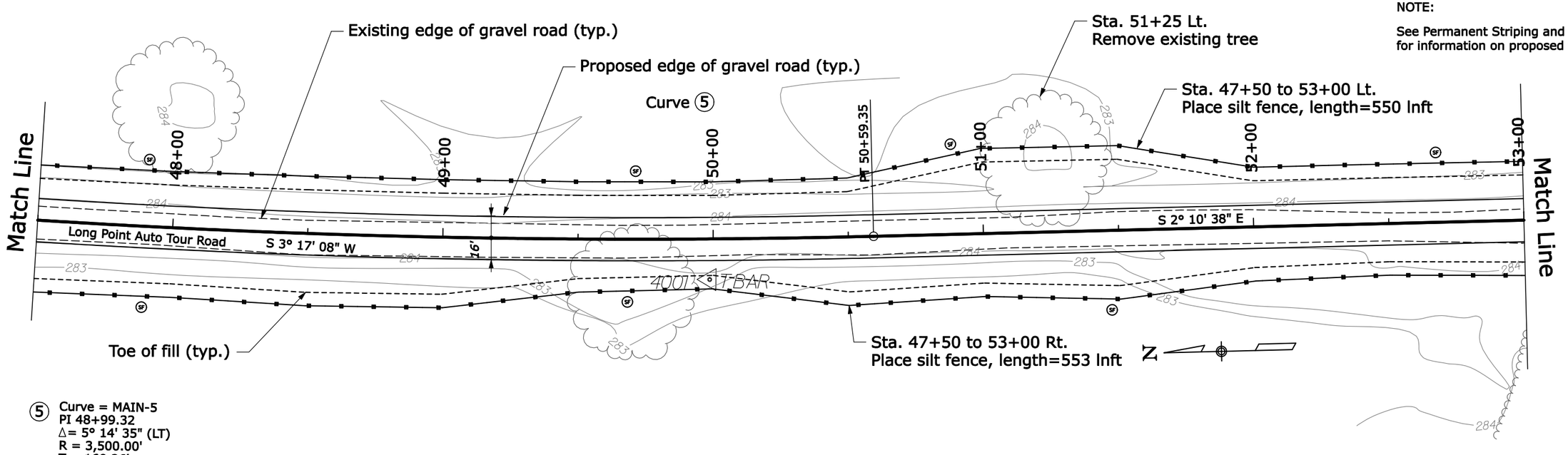
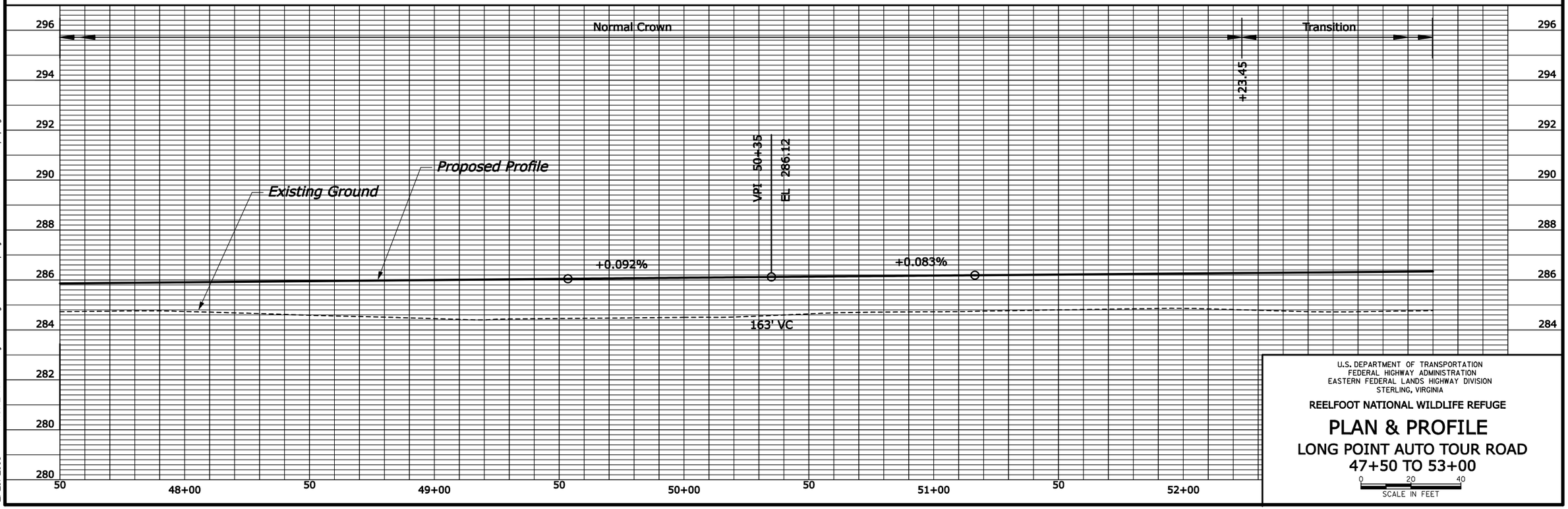
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-8

NOTE:

See Permanent Striping and Signing Plans for information on proposed sign locations.



⑤ Curve = MAIN-5
PI 48+99.32
△= 5° 14' 35" (LT)
R = 3,500.00'
T = 160.26'
L = 320.29'
N = 809,823.02
E = 992,708.99



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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD 47+50 TO 53+00

0 20 40
SCALE IN FEET

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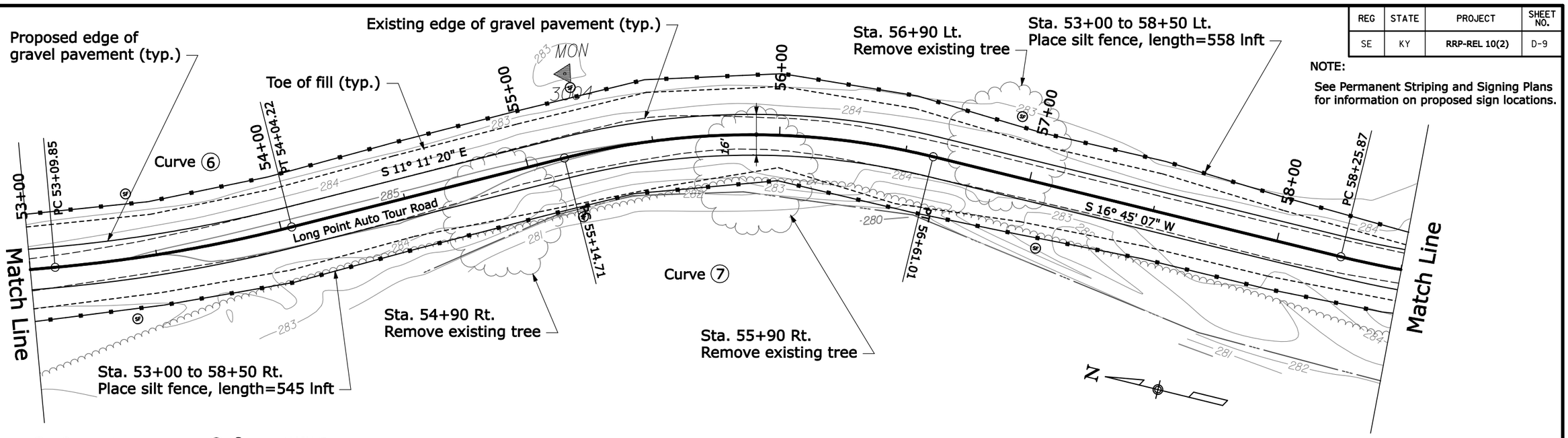
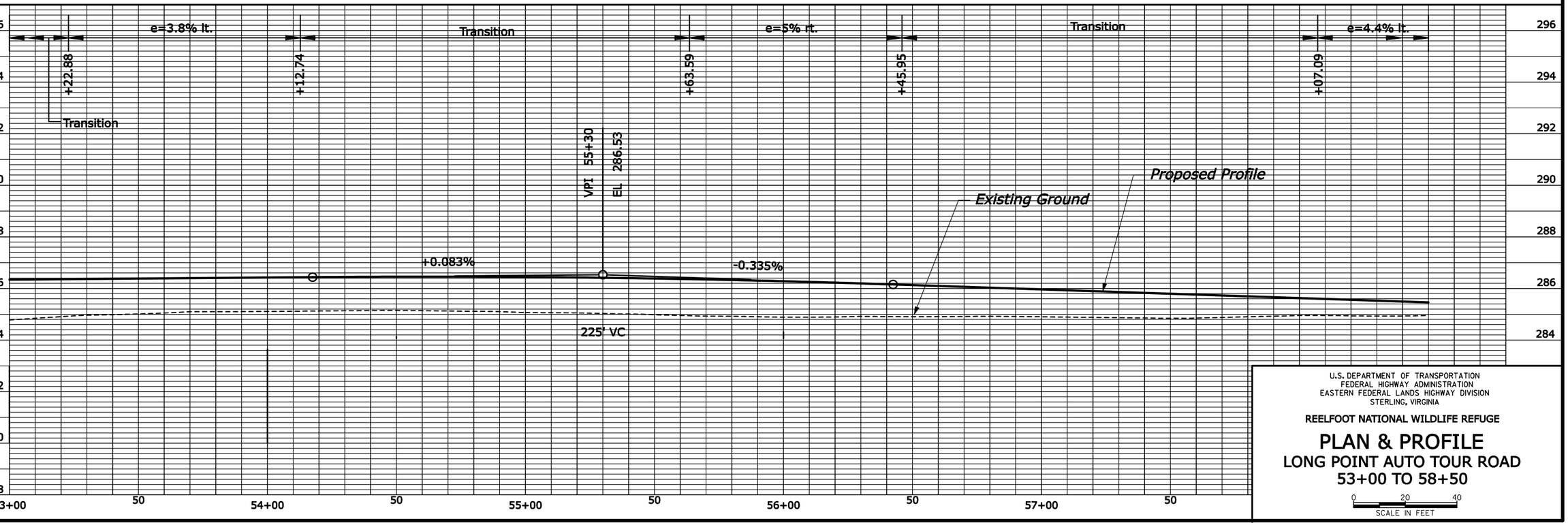
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-9

NOTE:
See Permanent Striping and Signing Plans for information on proposed sign locations.



⑥ Curve = MAIN-6
PI 53+57.13
Δ= 9° 00' 42" (LT)
R = 600.00'
T = 47.28'
L = 94.37'
N = 809,365.32
E = 992,726.39

⑦ Curve = MAIN-7
PI 55+89.34
Δ= 27° 56' 27" (RT)
R = 300.00'
T = 74.63'
L = 146.30'
N = 809,137.33
E = 992,771.48



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE
LONG POINT AUTO TOUR ROAD
53+00 TO 58+50

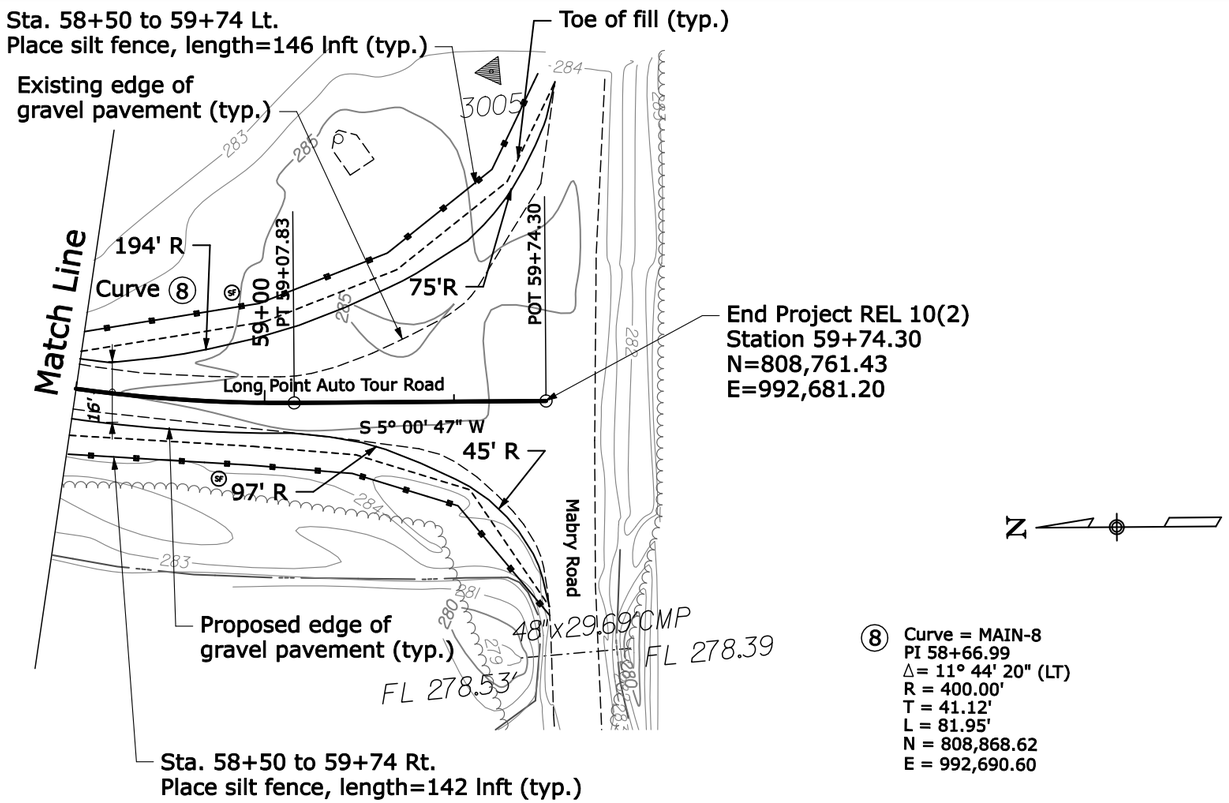
0 20 40
SCALE IN FEET

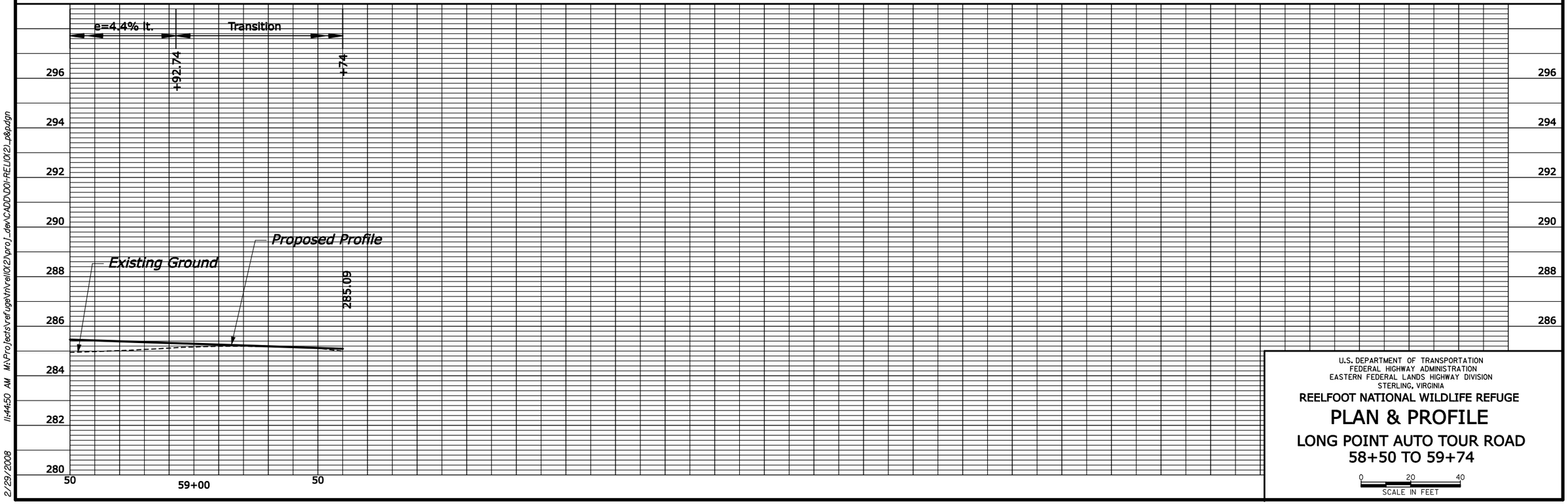
2/29/2008 11:44:6 AM M:\Projects\Refuge\Trl\rel\02\proj_dev\CADD\DOI-RELI02(2)_p&p.dgn

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	D-10

NOTE:

See Permanent Striping and Signing Plans for information on proposed sign locations.





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PLAN & PROFILE

LONG POINT AUTO TOUR ROAD
58+50 TO 59+74

0 20 40
SCALE IN FEET

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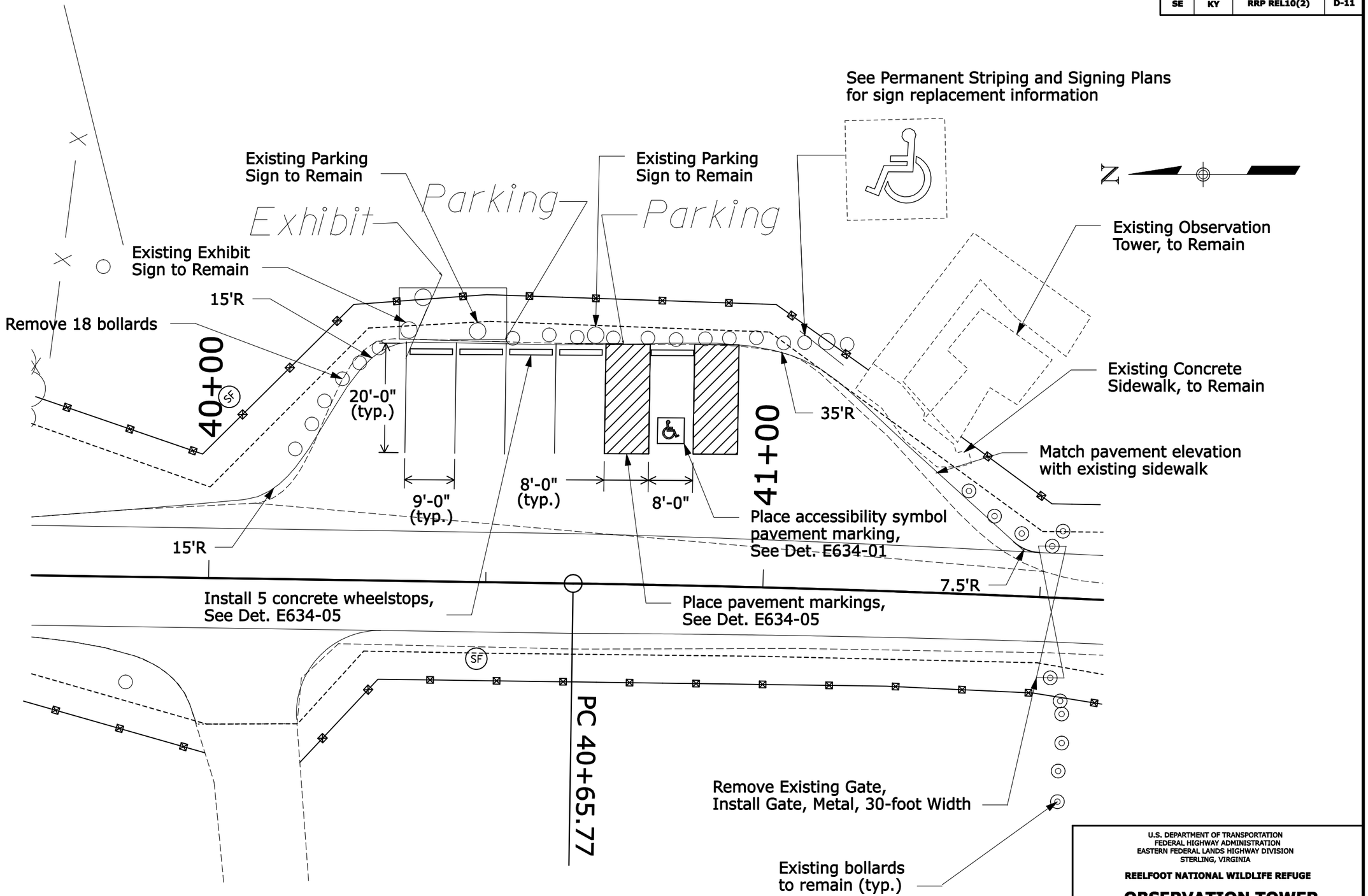
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP REL10(2)	D-11



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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

OBSERVATION TOWER RECONSTRUCTION PLAN

0 10 20
SCALE IN FEET

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	M-1

EROSION CONTROL NARRATIVE

DESCRIPTION OF PROJECT

Project RRP-REL 10(2) consists of the widening and paving of Long Point Auto Tour Road. Also included is the rehabilitation and paving of Observation Tower Parking Lot. The total area of disturbance for the site is approximately 3.9 acres. Receiving waters for runoff are Reelfoot Lake and the Mississippi River.

GENERAL GUIDELINES

The Erosion Control Plans (ECP) are incorporated into the Plan Sheets and Details and are meant as a guideline for preventing and controlling sediment. Install all erosion and sediment control devices as shown in the ECP or as directed by the Contracting Officer (CO). Do not modify the type, size or location of any control or practice without approval from the CO.

Inspect all erosion and sediment control devices every seven calendar days and within 24 hours after any storm event of more than 1/2 inches in precipitation. Repair as needed or as directed by CO. Clean all sediment control devices (silt fence, etc...) when they become half full of sediment or as directed by the CO. Dispose of the sediment by spreading it on site or disposing of it legally outside refuge boundaries.

Preventing initial soil erosion is much more effective than trying to control eroded sediment. Therefore, stabilize all disturbed areas as soon as practical, but not more than 14 days after construction activity has temporarily or permanently ceased. Stabilization may be in the form of rock riprap and/or turf establishment. Inspect seeded areas on a monthly basis. Construct temporary erosion controls in incremental stages as construction proceeds.

Attempt to control only the sediment-laden runoff generated by the project site. Separate and route clean, offsite runoff through the project using diversion channels and culverts.

Do not drive construction equipment across flowing waterways.

Do not allow construction vehicles to track sediment outside the project limits.

Comply with the US Army Corps of Engineers permit for pipe replacement work at Sta. 37+50 via following means:

a) If heavy equipment is utilized working in wetlands or mudflats, place it on mats, or take other measures to minimize soil disturbance.

b) Use appropriate erosion and sediment controls maintained in effective operating condition during construction, permanently stabilize at the earliest practicable date all exposed soil and other fill as well as any work below the ordinary high water mark or high tide line. Try to perform work within waters during periods of low-flow or no-flow.

TEMPORARY EROSION AND SEDIMENT CONTROL

PHASE I (ESTABLISH PERIMETER CONTROLS)

During clearing and grubbing operations, construct perimeter controls to ensure that sediment does not leave the project site. Perimeter controls include silt fence. Use diversion channels to route clean offsite drainage through the project site. Where possible, install permanent culverts and channels before beginning rough grading and divert offsite drainage through completed culverts as soon as practical. Where not practical, use temporary culverts for crossing of active streams or temporary diversion channels until permanent culverts can be installed. Do not line with plastic those portions of the diversion channels that run along natural stream beds.

PHASE II (INTERMEDIATE CONTROLS)

Apply intermediate controls during rough grading and culvert installation operations. Obtain the CO's approval before installing any controls not specified in the ECP. The CO may direct the Contractor to install certain controls in order to forestall or mitigate potential or existing erosion problems.

Upon completion of culverts or other structures, ensure that entrances, outlets and outlet channels and slopes are to final grade and are stabilized (with vegetation, riprap or pavement) before routing drainage through or on completed areas. Remove diversion channels and reroute offsite drainage through completed culverts as soon as practical.

Provide silt fence at the toe of all embankment slopes and around all stockpiled excavated roadway material. Apply mulch and turf establishment to stockpiles remaining in place longer than 14 calendar days or when directed by the CO.

PERMANENT EROSION AND SEDIMENT CONTROL

PHASE III (FINAL CONTROLS/STABILIZATION)

Complete remaining channels by riprapping or applying permanent turf establishment. Where necessary, replace eroded topsoil and reapply permanent turf establishment to disturbed areas where vegetation has not been established.

Inspect, clean and repair all culvert outlet protection, riprap basins and stabilized channels and slopes.

Remove silt fence only after the embankment slopes and toe of fill have been stabilized.

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STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

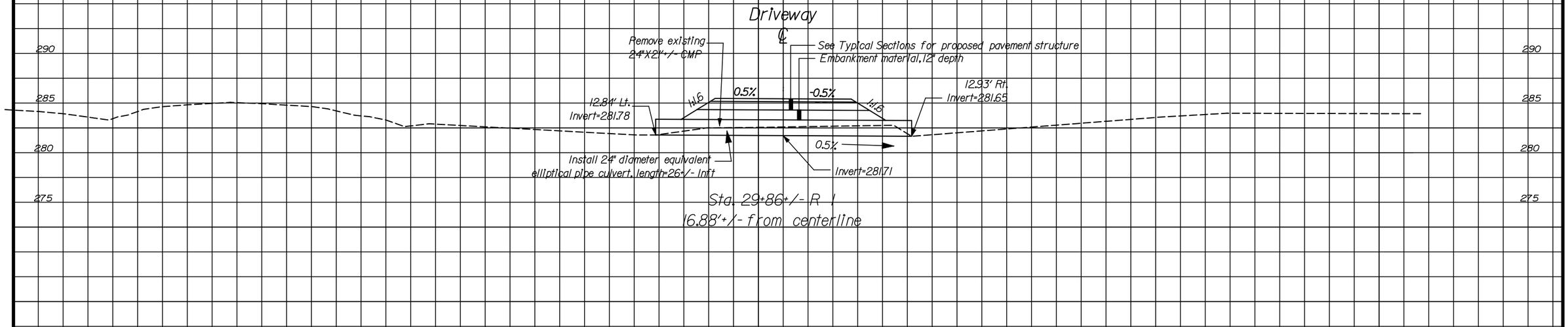
EROSION CONTROL NARRATIVE

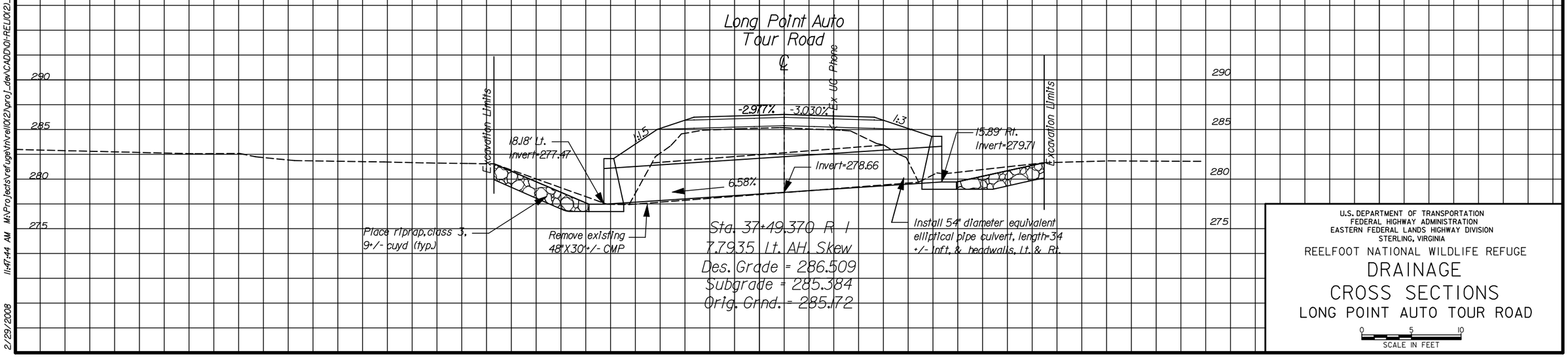
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	M-2

NOTES:

1. See DET.E601-A for construction of headwalls.

2. See STD.602-3 & 602-7 for pipe culvert installation.





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FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

DRAINAGE CROSS SECTIONS LONG POINT AUTO TOUR ROAD

0 5 10
SCALE IN FEET

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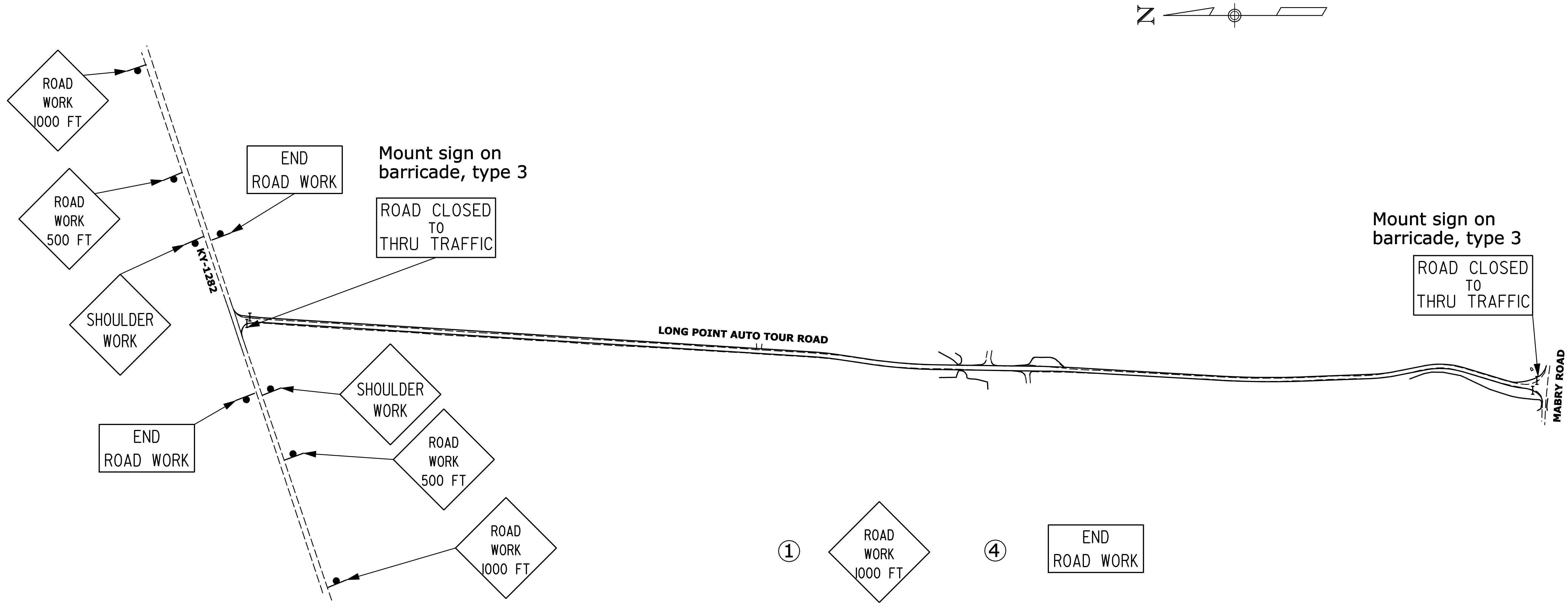
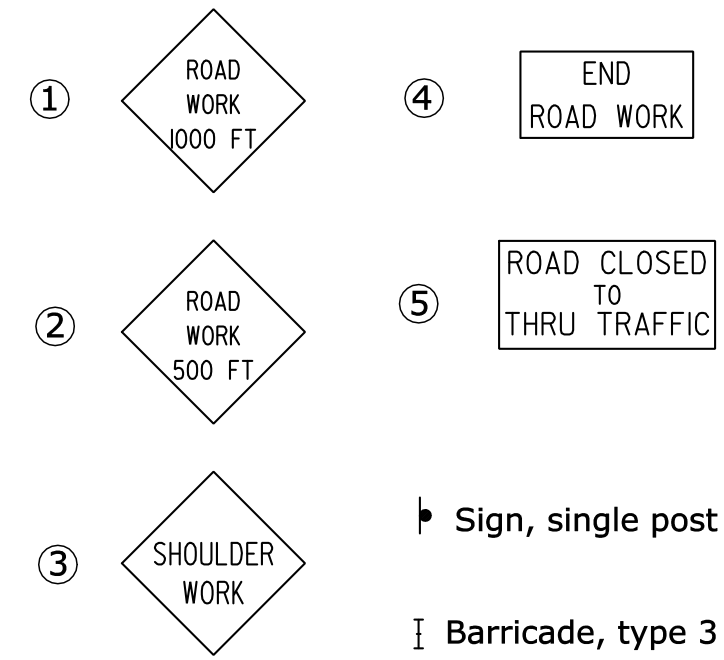
REG	STATE	PROJECT	SHEET NO.
SE	TN	RRP-REL 10(2)	N-1

NOTE:

The Traffic Control setup as shown here will be allowed only during the months of June and July. Use STD. 635-6 for traffic control any other time.





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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

TEMPORARY TRAFFIC CONTROL PLAN

LONG POINT AUTO TOUR ROAD

0 200 400
SCALE IN FEET

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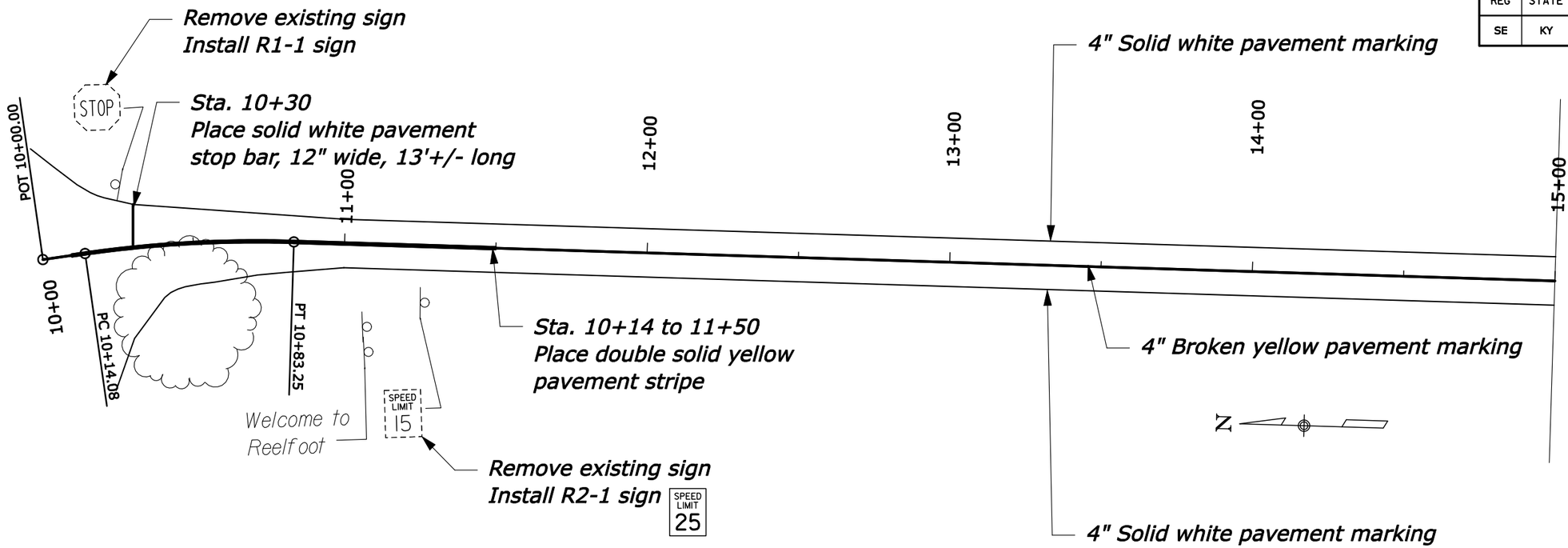
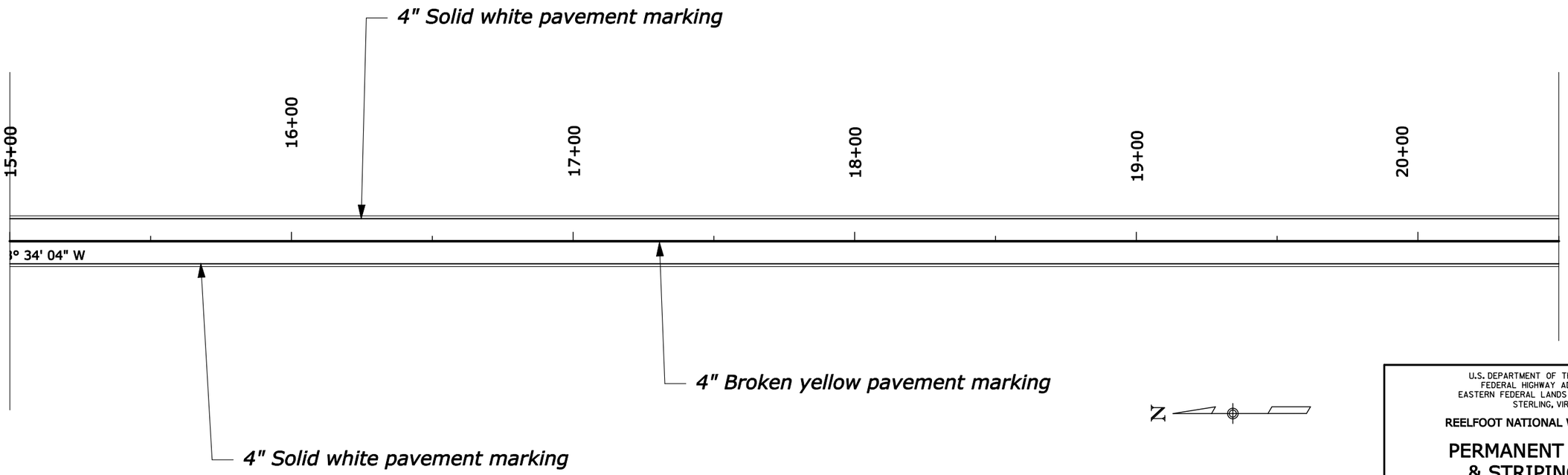
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP REL 10(2)	P-1





U.S. DEPARTMENT OF TRANSPORTATION
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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PERMANENT SIGNING & STRIPING PLAN

0 20 40
SCALE IN FEET

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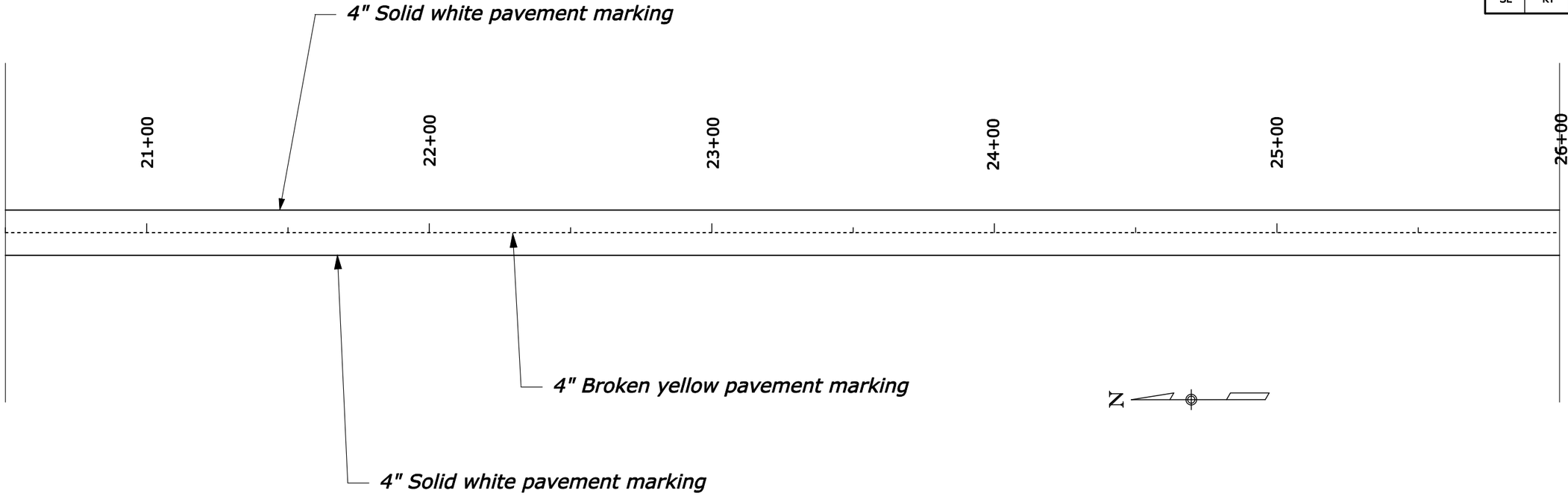
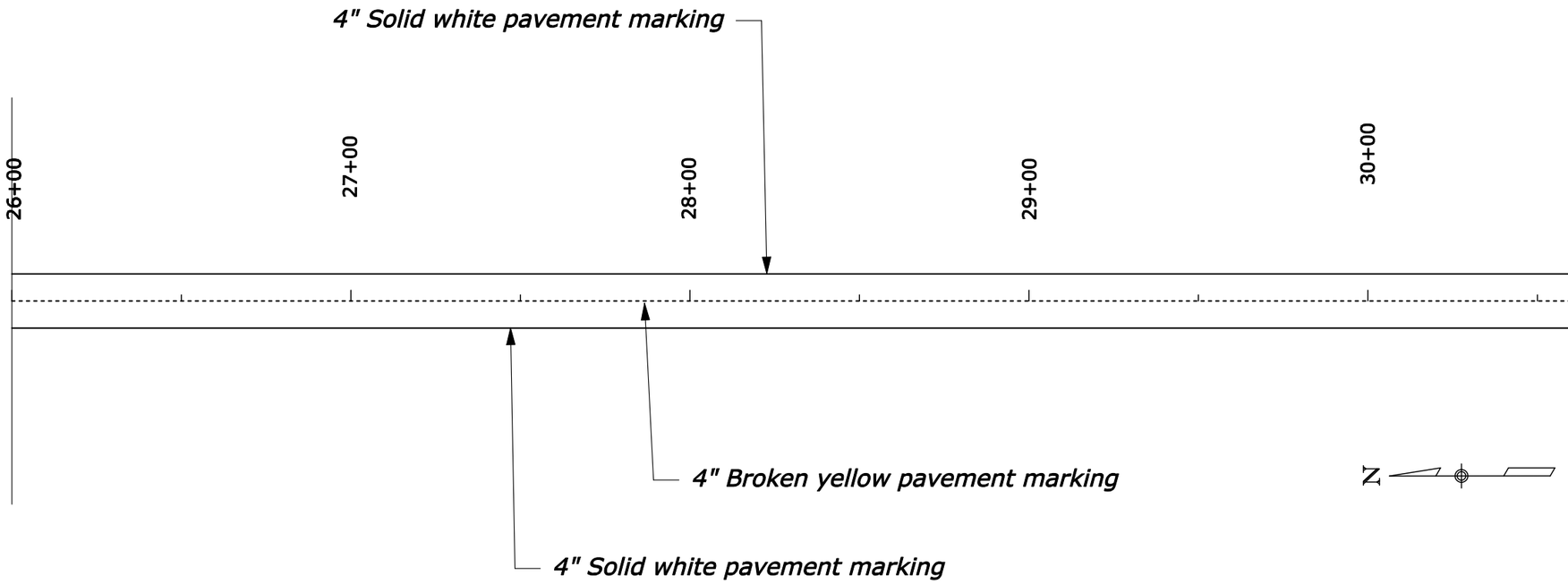
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP REL 10(2)	P-2





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PERMANENT SIGNING & STRIPING PLAN

0 20 40
SCALE IN FEET

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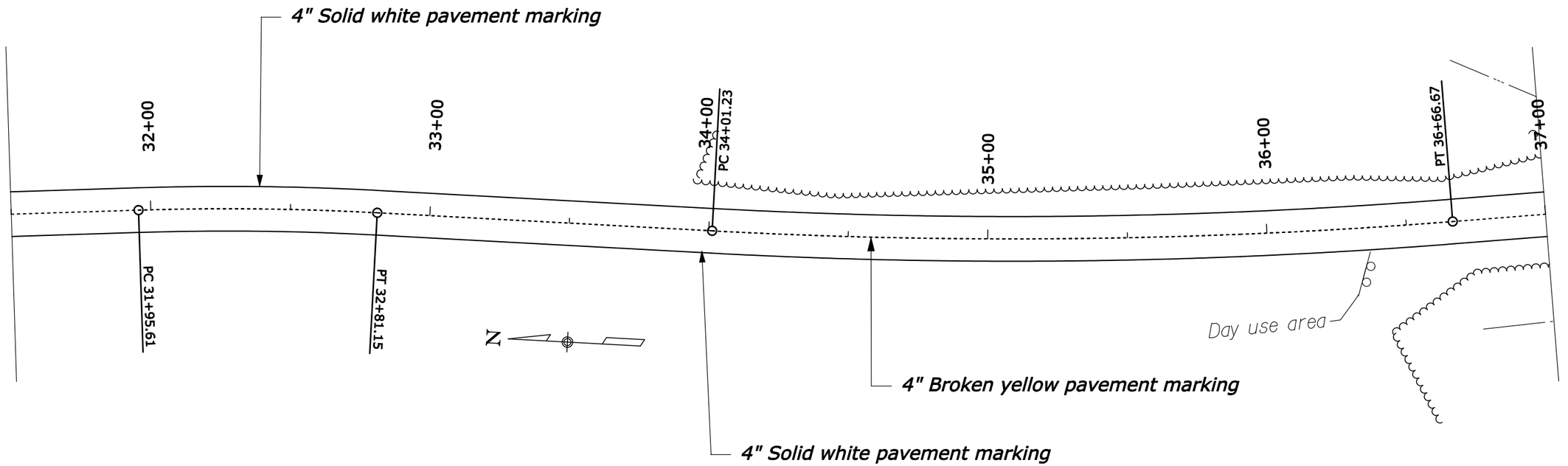
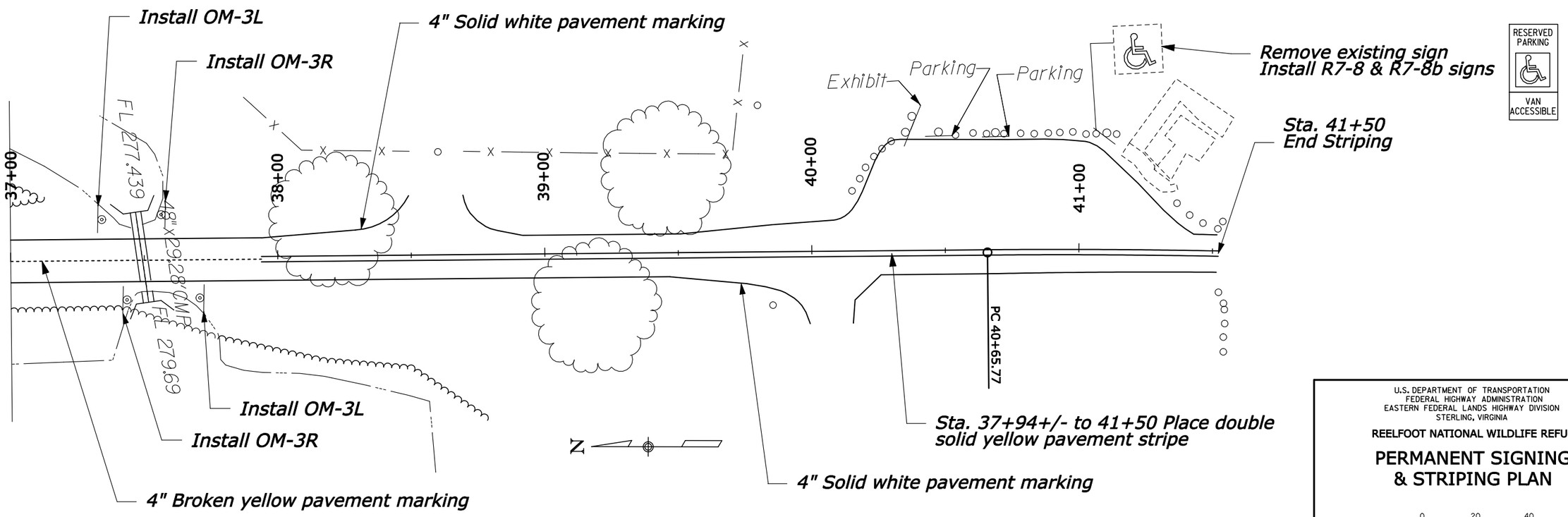
REG	STATE	PROJECT	SHEET NO.
SE	TN	RRP REL 10(2)	P-3





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

PERMANENT SIGNING & STRIPING PLAN

0 20 40
SCALE IN FEET

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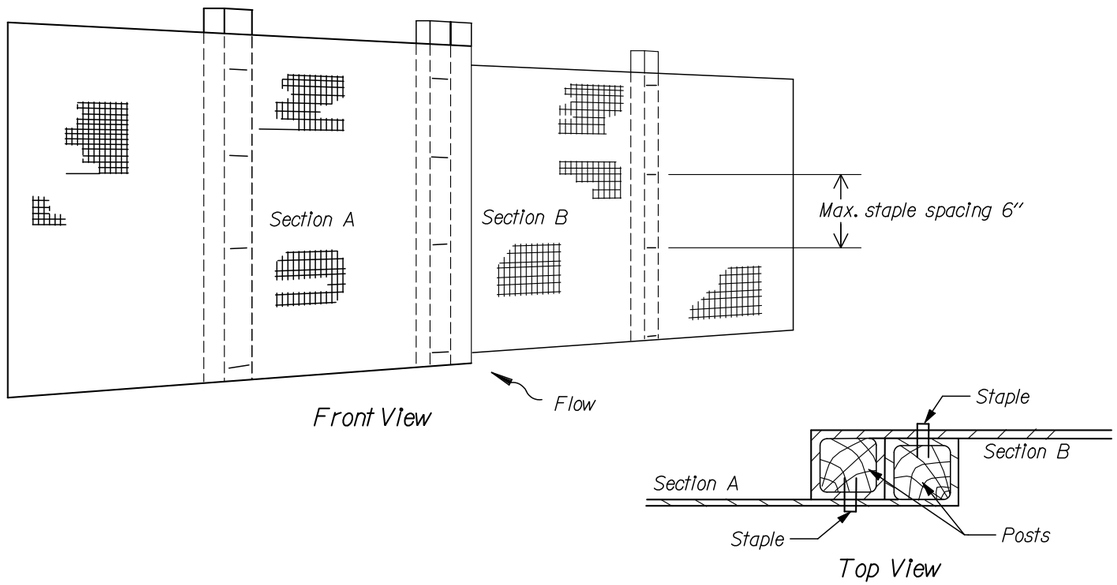
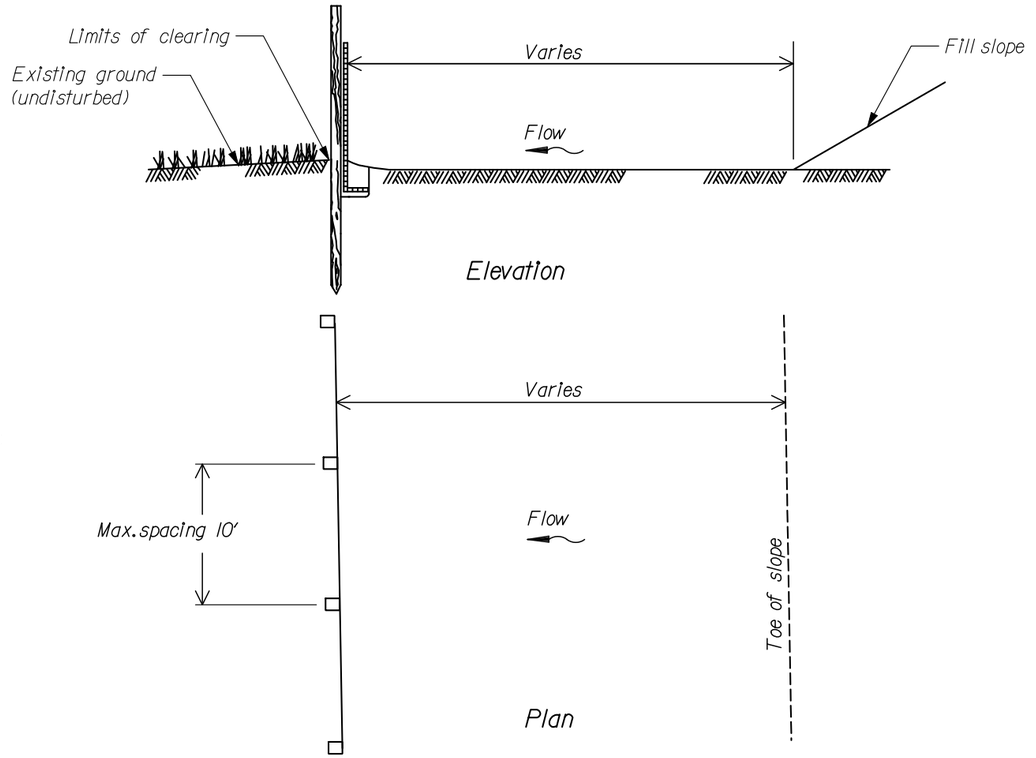
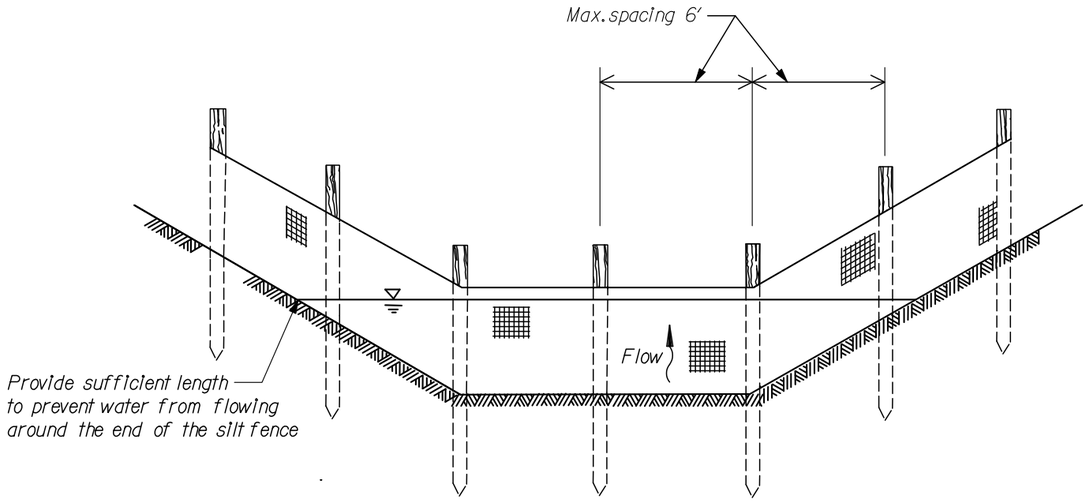
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-1



JOINING TWO ADJACENT SILT FENCE SECTIONS

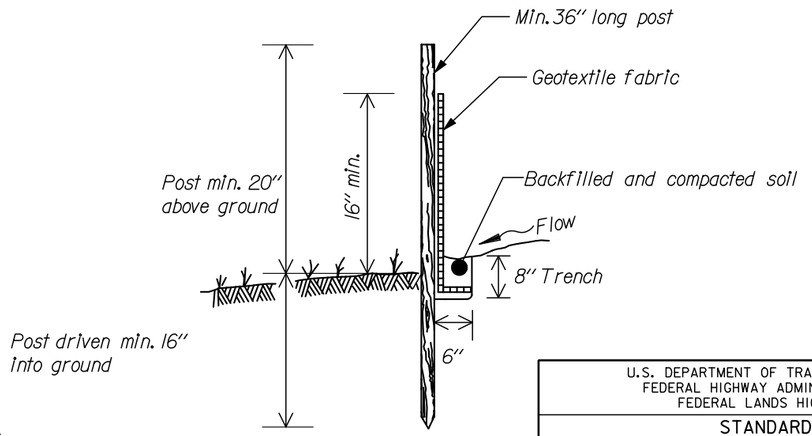


SILT FENCE INSTALLATION AT TOE OF FILL



SILT FENCE INSTALLATION IN A DRAINAGE DITCH

Note: Use drainage ditch installation for low flow conditions only when specified on Erosion Control Plan.



(not to scale)

Note:
Alternate pre-assembled silt fence options will be allowed as long as specified minimums are satisfied. Follow manufacturer's information for installation procedures.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

STANDARD

SILT FENCE

STANDARD APPROVED FOR USE --/----

REVISED:

STANDARD
157-1

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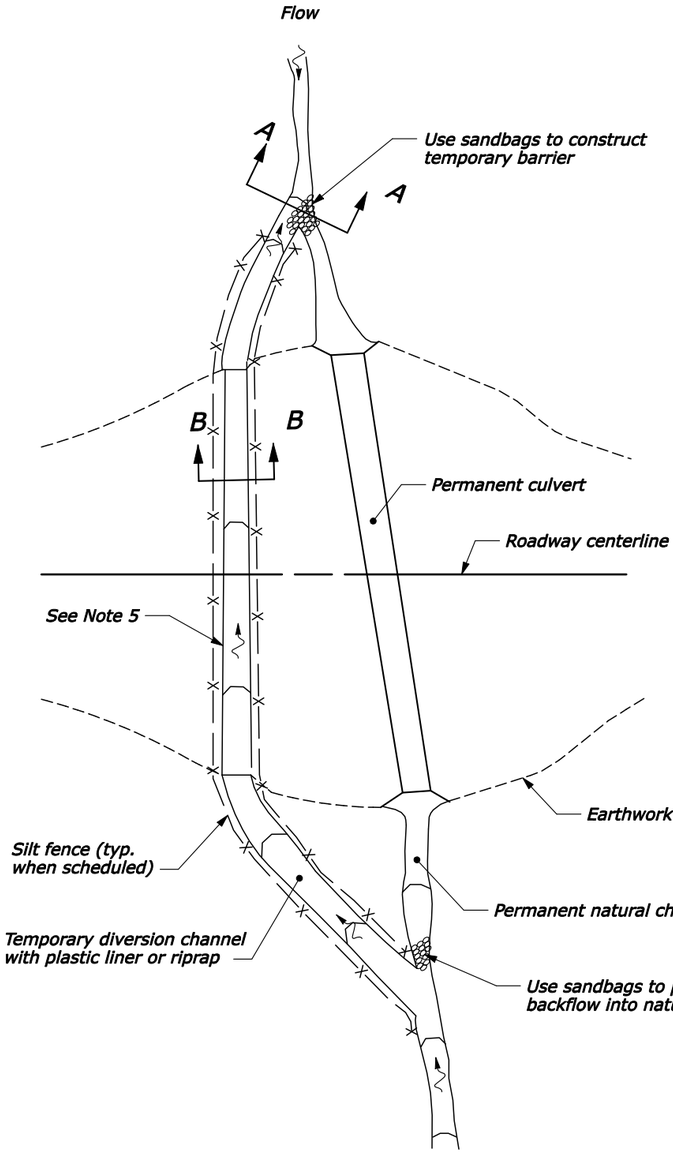
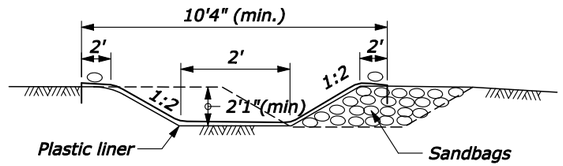
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-2

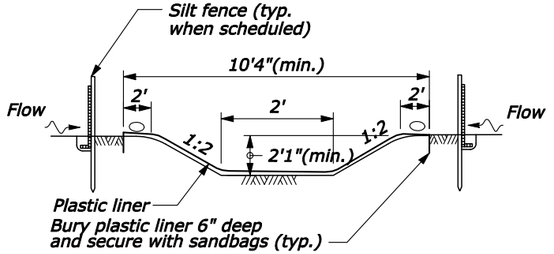


PLAN

DIVERSION CHANNEL

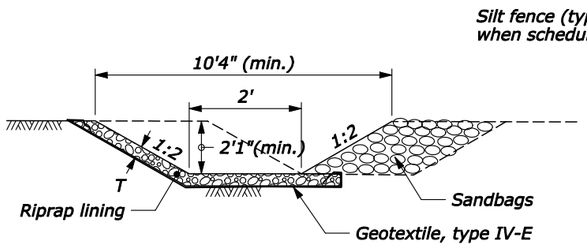


SECTION A-A

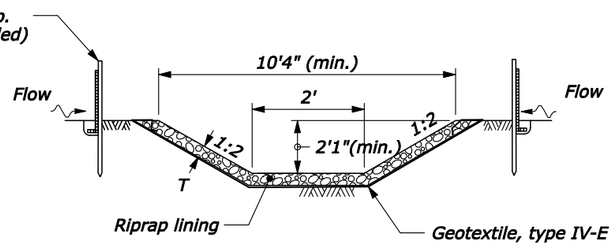


SECTION B-B

PLASTIC LINED DIVERSION CHANNEL

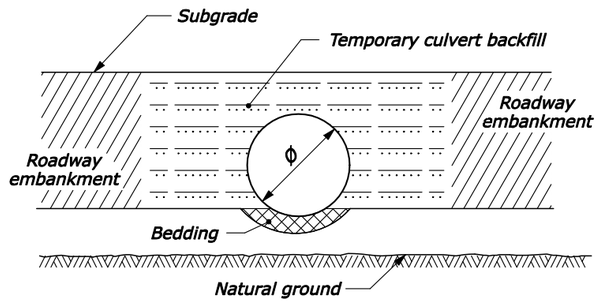


SECTION A-A



SECTION B-B

RIPRAP LINED DIVERSION CHANNEL



SECTION B-B

TEMPORARY CULVERT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY DIVERSION CHANNELS

STANDARD APPROVED FOR USE 6/2005
REVISED: 6/2007

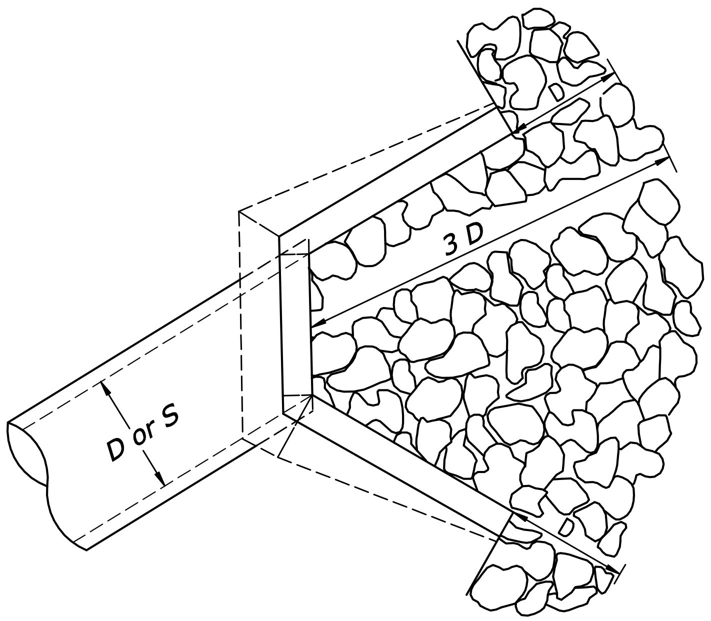
STANDARD
157-5A

NOTE:

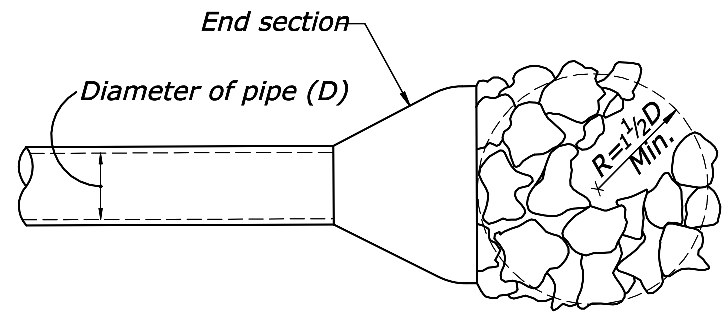
1. See Erosion Control Section for temporary culvert diameter, riprap class, channel dimensions and quantities.
2. Use plastic liner or riprap along the entire length and width of the temporary diversion channel.
3. Construct channel at a minimum grade of 0.5 percent.
4. Do not construct with longitudinal joints if using a plastic liner. Bury the upstream edge of the liner a minimum of 6" deep and secure with riprap or sandbags.
5. When specified replace the portion of the diversion channel through the roadway embankment with temporary culvert. Compact temporary culvert backfill using one of the methods listed in Subsection 204.11(a).

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-3

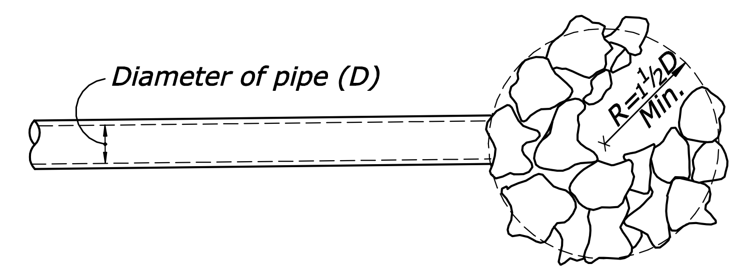
DEPTH (d)	
Riprap Class	*Depth (d)-(in)*
1	*12*
2	*18*
3	*24*
4	*30*
5	*42*
6	*48*



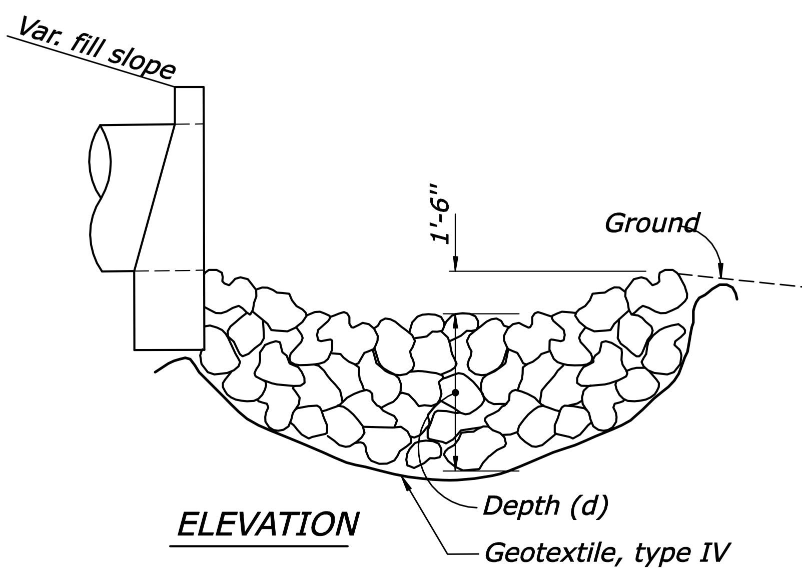
PLAN



PLAN

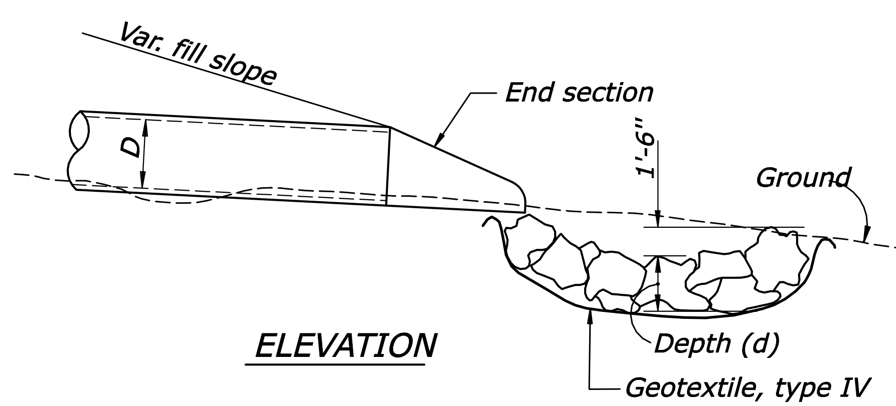


PLAN



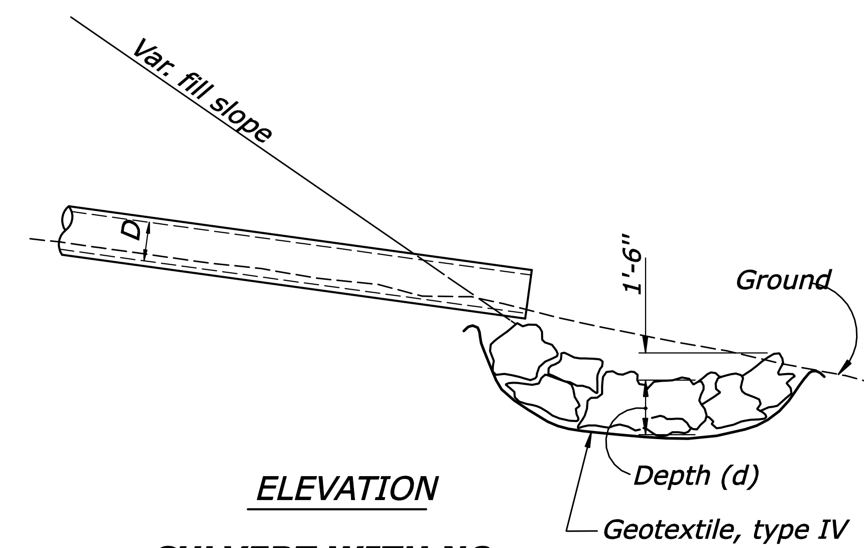
ELEVATION

CULVERT WITH HEADWALL



ELEVATION

CULVERT WITH END SECTION



ELEVATION

CULVERT WITH NO END TREATMENT

NOTE:

For arch or elliptical pipes, use equivalent diameter for (D) dimension

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

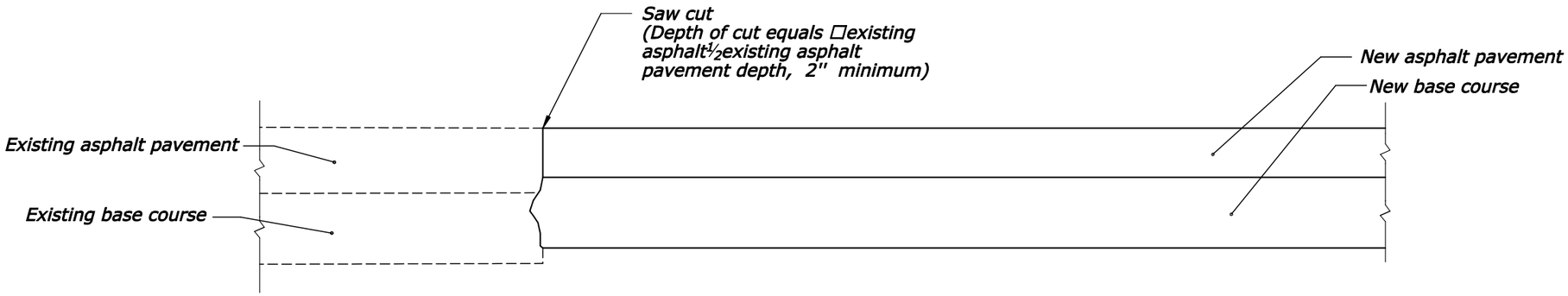
U.S. CUSTOMARY DETAIL

LOOSE RIPRAP AT CULVERT

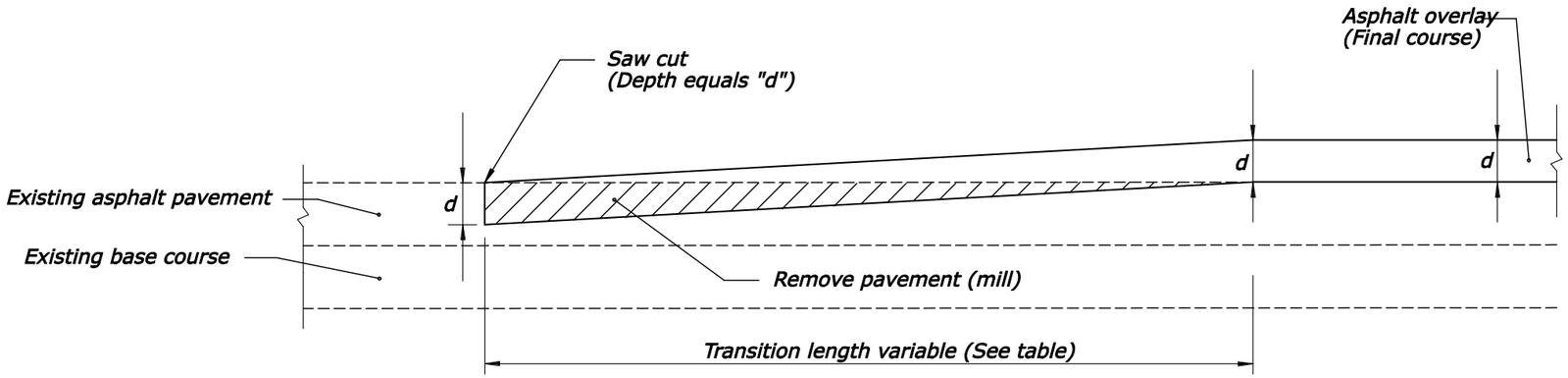
DETAIL APPROVED FOR USE	DETAIL
REVISED: 05/07	E251-01

2/29/2008 11:57:42 AM

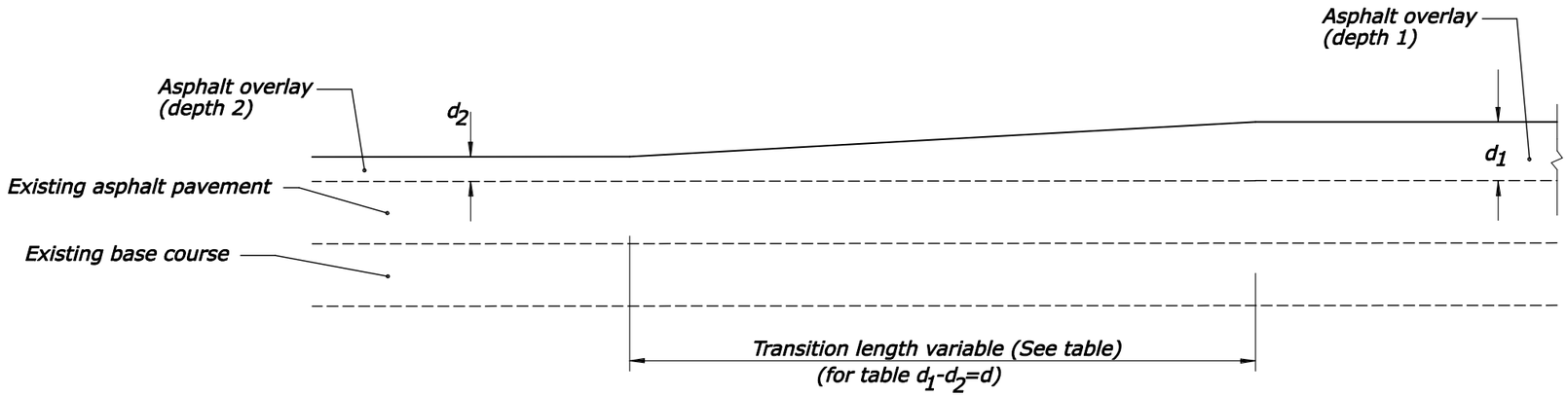
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-4



NEW PAVEMENT



OVERLAY



OVERLAY - DEPTH TRANSITIONS

d - Inches	Transition Length - Feet
1	20
1.5	30
2	40
2.5	50
3	60

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PAVEMENT TRANSITIONS

DETAIL APPROVED FOR USE

REVISED: 07/07

DETAIL E401-01

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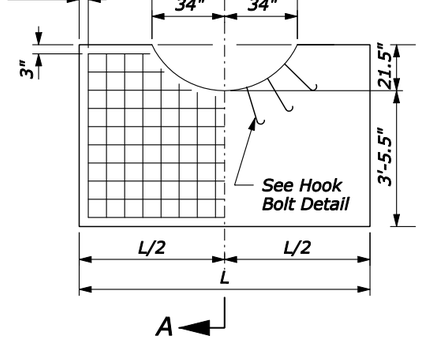
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-5

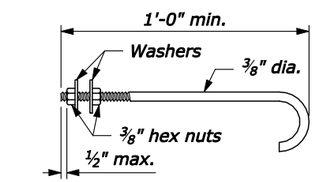
HEADWALL FOR SINGLE PIPE CULVERT

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

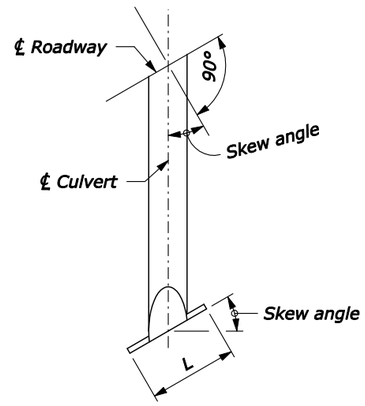
D (EQUIV.) INCH	H FEET	SQUARE HEADWALL			7.79° SKEW			15° SKEW			30° SKEW			45° SKEW		
		L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB
54	5.25	9.25	1.50	124	9.34	1.51	125	9.50	1.54	126	10.75	1.75	148	13.00	2.11	175



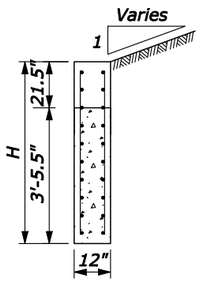
SINGLE PIPE CULVERT



HOOK BOLT DETAIL



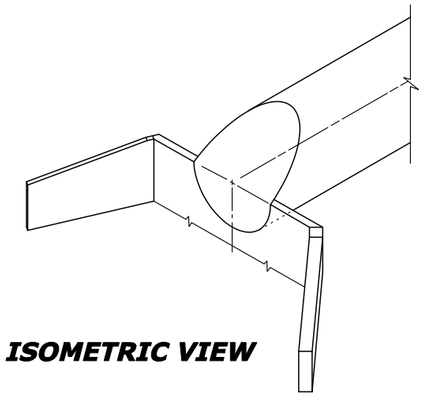
TYPICAL HALF PLAN



SECTION A-A

NOTE:

1. Concrete conforms to Section 601. Pour concrete monolithically. Chamfer all exposed edges 3/4" and finish all exposed surfaces with a Class 1 ordinary finish.
2. Clearance for reinforcing steel is 2" unless otherwise noted.
3. Headwall dimension "H" may be reduced in solid rock provided the wall is keyed into the rock at least 1 foot. Excavate and backfill according to Section 209.
4. Set hook bolts on nominal 18" centers around pipe perimeter at center of headwall. Hook bolts conform to ASTM A307. Galvanize according to ASTM A153.
5. For skews other than those shown, multiply quantities and dimensions "L" for square headwalls by secant of the skew angle.
6. Final quantities will be determined by using the tables on this standard.
7. Do not order materials until the length, skew angle, and slope bevel in the field have been approved.



ISOMETRIC VIEW

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

CONCRETE HEADWALLS

STANDARD APPROVED FOR USE 6/2005
REVISED: 6/2007

STANDARD
601-1A

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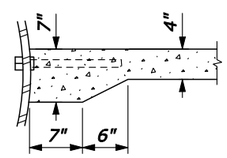
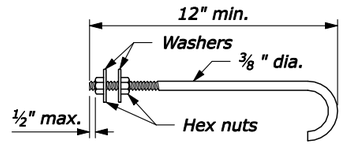
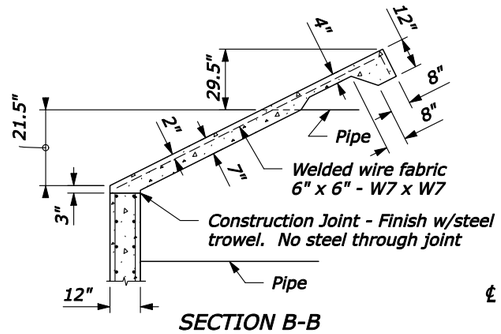
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-6



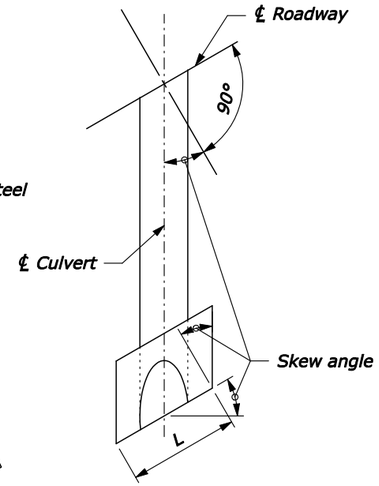
SECTION A-A



HOOK BOLT DETAIL



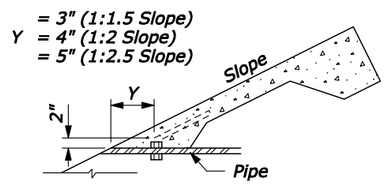
SECTION B-B



TYPICAL HALF PLAN

NOTE:

1. Concrete conforms to Section 601. Chamfer all exposed edges ¾" and finish all exposed surfaces with a Class 1 ordinary finish.
2. Clearance for reinforcing steel is 2" unless otherwise noted.
3. Set hook bolts on nominal 18" centers around pipe perimeter. Hook bolts conform to ASTM A307. Galvanize according to ASTM A153.
4. For skews other than those shown, multiply quantities and dimensions "A", "B" & "L" for square headwalls by secant of the skew angle.
5. For the skew angle shown, the dimension "S" and the quantities for slope paving are computed for a 1V:1.5H sideslope. To compute dimension "S" and slope paving quantities for a 1V:2H slope multiply the values for that particular skew by 1.24, and for a 1V:2.5H slope multiply by 1.49.
6. Final quantities will be determined by using the tables on this standard.
7. Do not order materials until the length, skew angle, and slope bevel in the field have been approved.

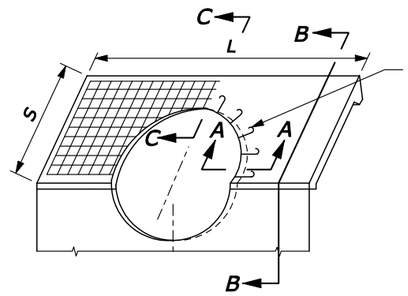


SECTION C-C

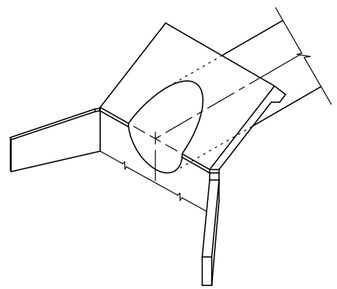
SLOPE PAVING FOR SINGLE PIPE CULVERT

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

D(EQUIV.) INCH	S FEET	SQUARE HEADWALL			7.79° SKEW			15° SKEW			30° SKEW			45° SKEW		
		L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB	L FEET	CONC. CUYD	STEEL LB
54	7.75	9.25	1.14	60	9.34	1.15	61	9.50	1.17	61	10.75	1.33	70	13.00	1.60	83



SINGLE PIPE CULVERT



ISOMETRIC VIEW

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

SLOPE PAVING FOR CONCRETE HEADWALLS

STANDARD APPROVED FOR USE 6/2005

REVISED:

STANDARD 601-2A

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-7

WINGWALLS FOR CONCRETE HEADWALLS

DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES

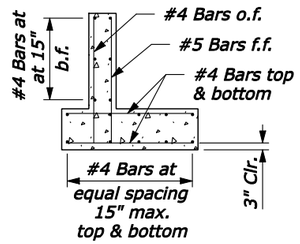
D(EQUIV.) INCH	H FEET	0° WINGWALL SKEW			15° WINGWALL SKEW			30° WINGWALL SKEW			45° WINGWALL SKEW			60° WINGWALL SKEW		
		W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB	W FEET	CONC. CUYD	STEEL LB
54	5.25	6.00	2.81	180	6.00	2.82	180	6.00	2.80	180	6.00	2.78	180	6.75	3.06	202

RECOMMENDED WINGWALL SKEWS

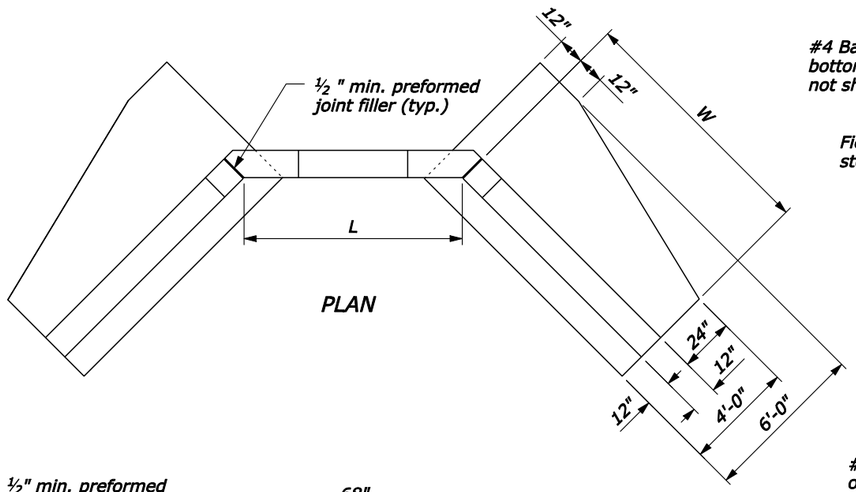
WINGWALL	PIPE SKEW				
	0°	7.79°	15°	30°	45°
①	45°	45°	45°	60°	60°
②	45°	30°	30°	15°	0°
③	45°	30°	30°	15°	0°
④	45°	45°	45°	60°	60°

NOTE:

1. Concrete conforms to Section 601. Chamfer all exposed edges ¾" and finish all exposed surfaces with a Class 1 ordinary finish.
2. Clearance for reinforcing steel is 2 inches unless otherwise noted.
3. For skew angles shown in table, the length W and quantities for wingwalls are computed for a 1V:1.5V side slope. For 1H:2V or 1H:2.5V slopes compute length W with the following equation:
   W=D/2 x slope x secant (wingwall skew angle)
   Minimum W not less than 6 feet.
4. Quantities shown in table are for one wingwall only. For lengths, W, not shown in table, approximate the quantities by multiplying the quantities for 0° skew and a given height, H, by the factor 1 + [(W-1.8) x 0.14].
5. See Standards 601-1A and 601-2A for headwall and slope paving dimensions.
6. Final quantities will be determined by using the tables on this standard.
7. Do not order materials until the length, skew angle, and slope bevel in the field have been approved.



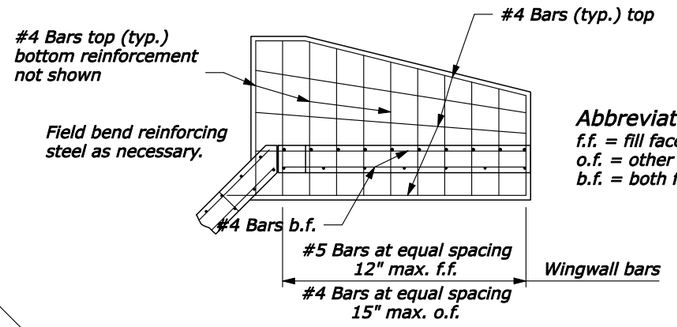
SECTION A-A



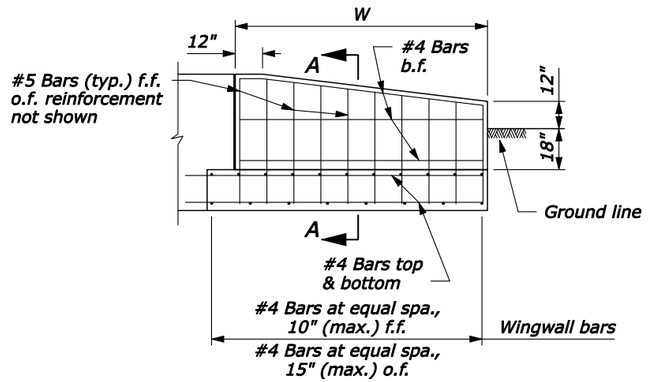
PLAN

ELEVATION

HEADWALL AND WINGWALL



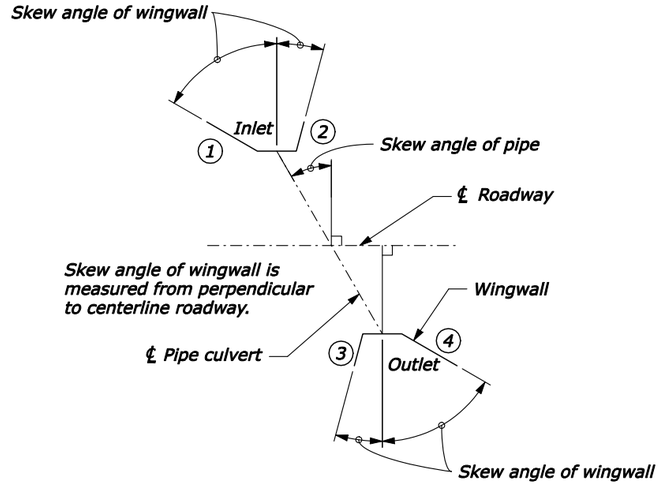
PLAN



ELEVATION

TYPICAL WINGWALL

Abbreviations:
f.f. = fill face
o.f. = other face
b.f. = both faces



WINGWALL LAYOUT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

WINGWALLS FOR CONCRETE HEADWALLS

STANDARD APPROVED FOR USE 6/2005
REVISED: 6/2007

STANDARD 601-3A

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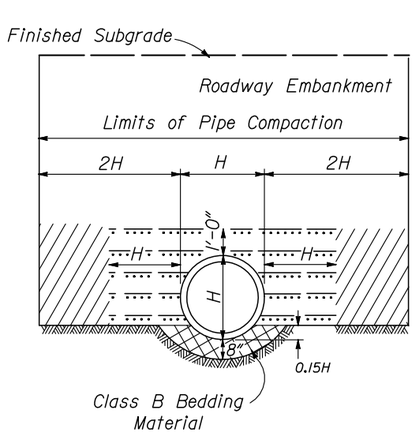
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-8

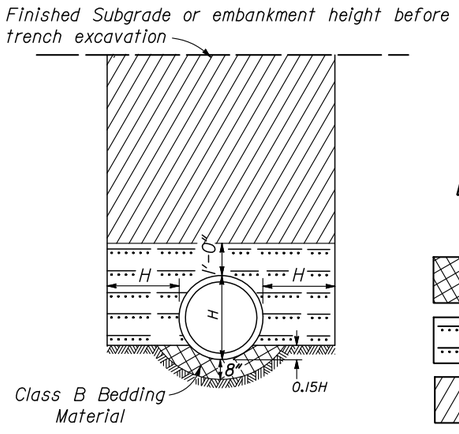
CONCRETE ROUND PIPE CULVERT

FILL HEIGHT AND PIPE CLASS TABLE

PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	EMBANKMENT				TRENCH			
		CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	24	11	11	16	23	18	18	26	37
18	24	10	10	25	39	14	14	31	45
24	24	11	11	15	31	15	15	22	40
30	24	9	13	16	35	13	17	20	46
36	24	9	9	20	41	11	14	26	56
48	24	12	14	26	44	16	17	31	50
60	24	15	17	28	44	15	20	32	50
72	24	13	17	31	41	16	20	35	49
84	24	13	19	31		15	23	37	
96	24	13	20			16	24		
108	24	16	20			19	26		



EMBANKMENT INSTALLATION



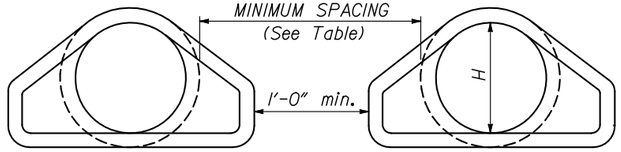
TRENCH INSTALLATION

LEGEND:

- Bedding Material
- Approved granular material or fine compactable soil placed in layers not exceeding 6" compacted depth.
- Embankment material placed in layers not exceeding 6"compacted depth.
- Impermeable backfill material

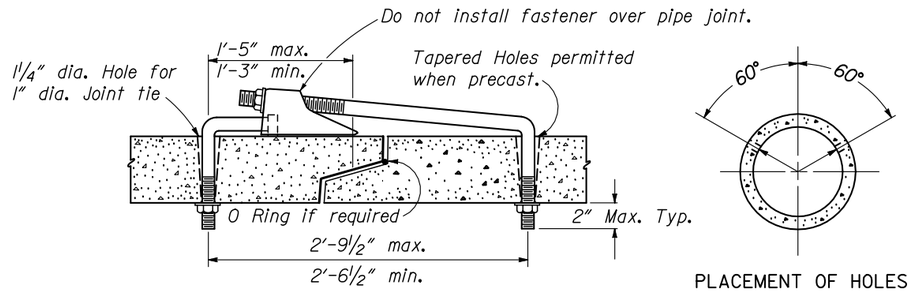
NOTE:

1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavements.
3. Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in a trench, the compaction limits shall be the walls of the trench.
4. Where unyielding or unstable material is encountered, install the pipe culvert according to the limits of pipe compaction shown on standard 602-3.
5. When grades exceed 10%, install supplemental concrete pipe ties on pipe culvert or install bell and spigot pipe.
6. Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway Bridges.



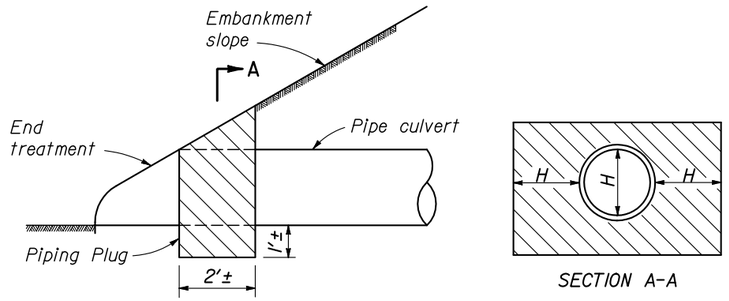
MINIMUM SPACING		
DIAMETER INCHES	EMBANKMENT	TRENCH
12-36	15"	2H
36-96	H/2	72"
OVER 96	48"	72"

MULTIPLE ROUND PIPE INSTALLATION



SUPPLEMENTAL CONCRETE PIPE TIE

PLACEMENT OF HOLES



SECTION A-A

Construct a piping plug of impermeable backfill material at the pipe inlet where granular material is used for backfill.

PIPING PLUG

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

STANDARD

CONCRETE PIPE CULVERT INSTALLATION

STANDARD APPROVED FOR USE XX/XX	STANDARD
REVISED: XX/XX	602-7

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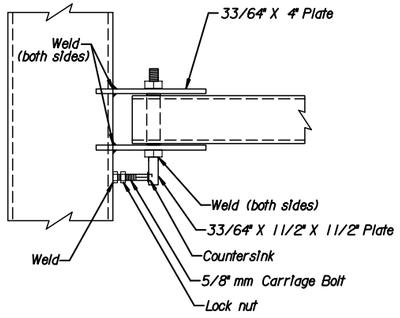
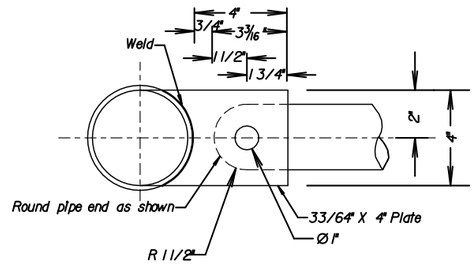
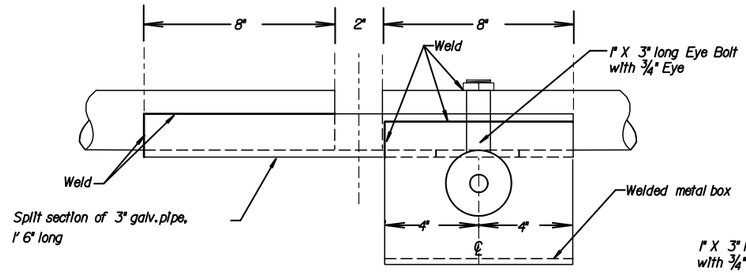
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP REL 10(2)	S-9

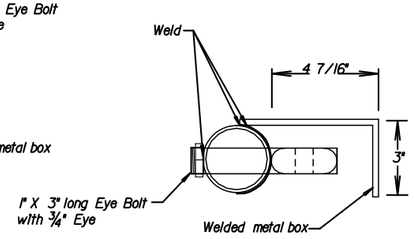




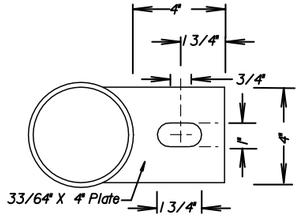
SECTION A-A
(TOP HANGER)



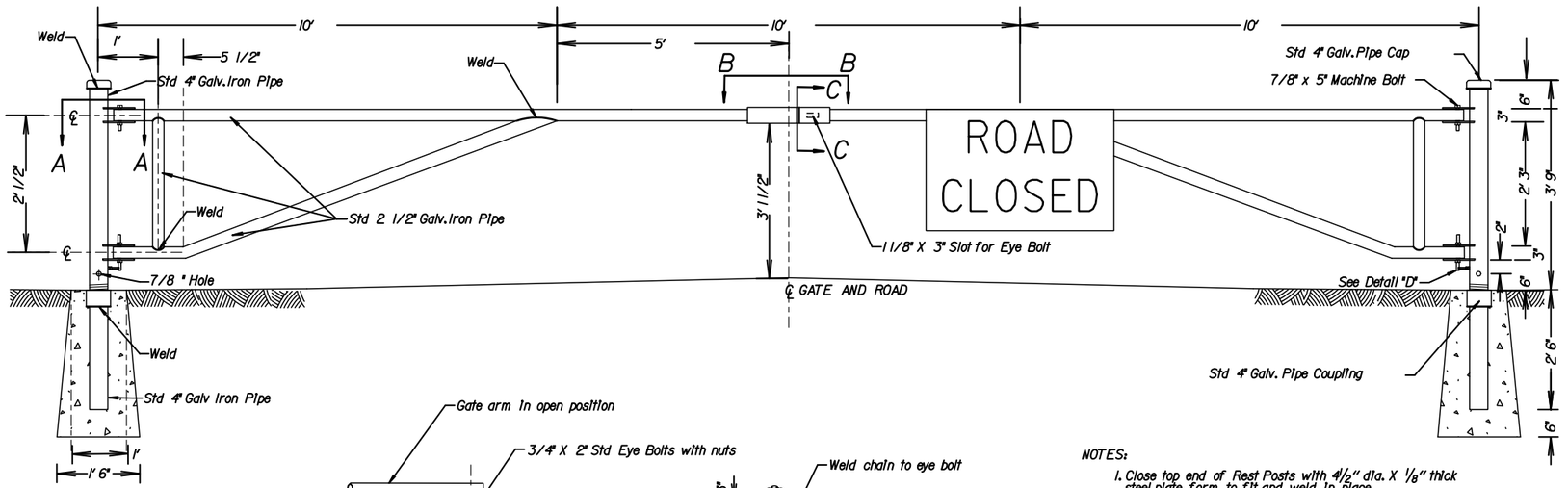
VIEW B-B

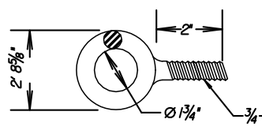


SECTION C-C

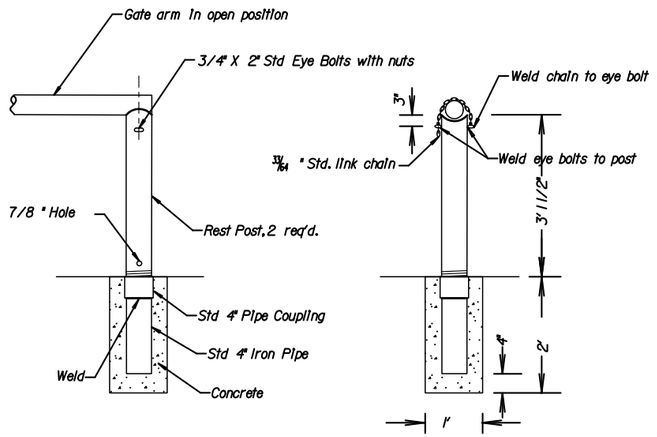


DETAIL "D"
(BOTTOM HANGER)





STD. EYE BOLT DETAIL



REST POST DETAIL

NOTES:

1. Close top end of Rest Posts with 4½" dia. X ⅛" thick steel plate, form to fit and weld in place.
2. Gates and posts to be painted, alternating black and reflectorized white 4-inch stripes at 45°, as directed by CO.
3. All metal parts shall be galvanized.
4. Concrete shall conform to Section 601.
5. Mount one "Road Closed" sign on gate as shown. Center the sign over the lane carrying the incoming traffic.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

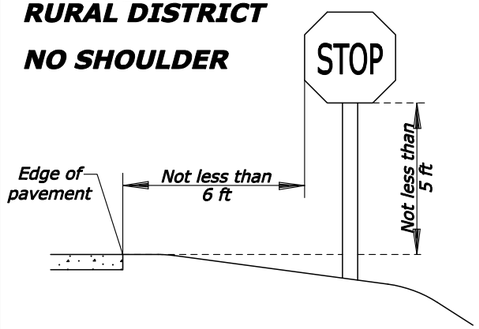
ENGLISH DETAIL

METAL GATE

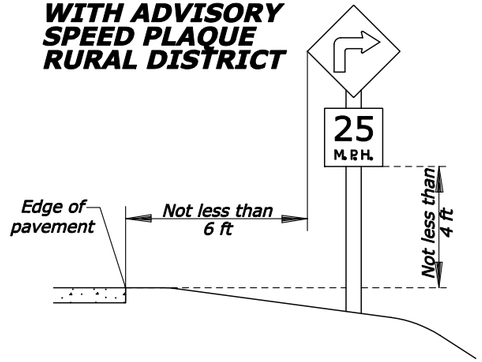
DETAIL APPROVED FOR USE XX/XX	DETAIL
REVISED: XX/XX	E619-A

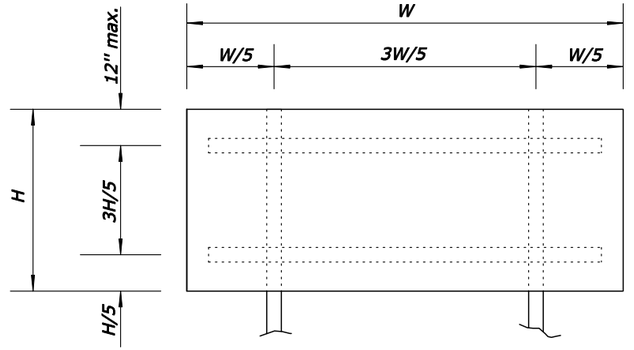
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-10

ROADSIDE SIGN RURAL DISTRICT NO SHOULDER



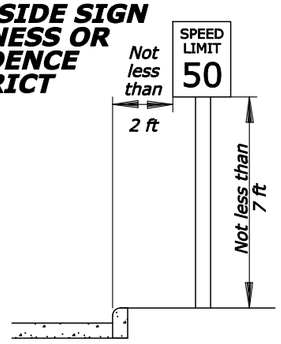
WARNING SIGN WITH ADVISORY SPEED PLAQUE RURAL DISTRICT



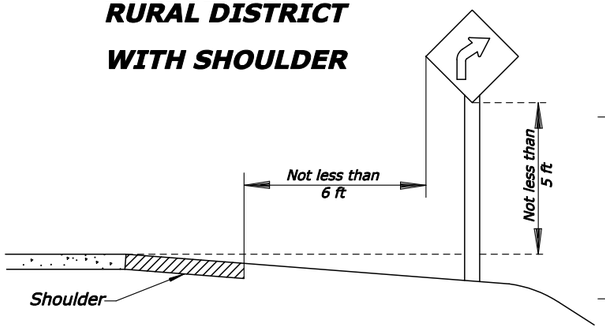


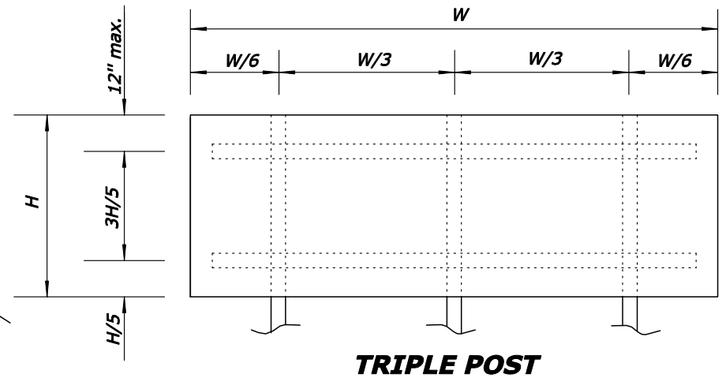
DOUBLE POST

ROADSIDE SIGN BUSINESS OR RESIDENCE DISTRICT



ROADSIDE SIGN RURAL DISTRICT WITH SHOULDER

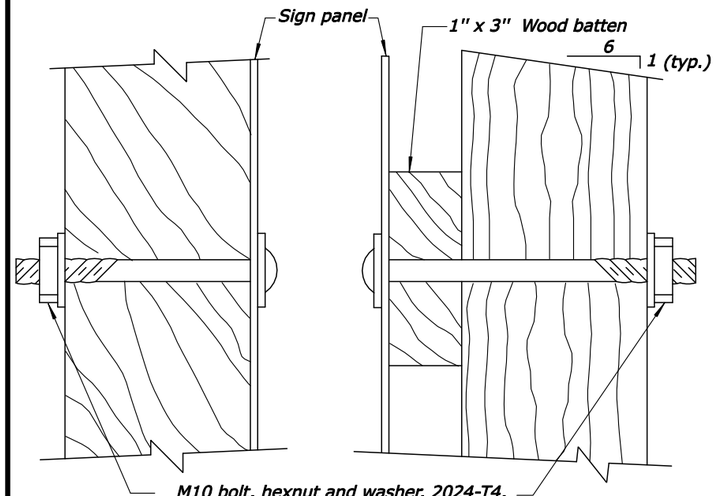




TRIPLE POST

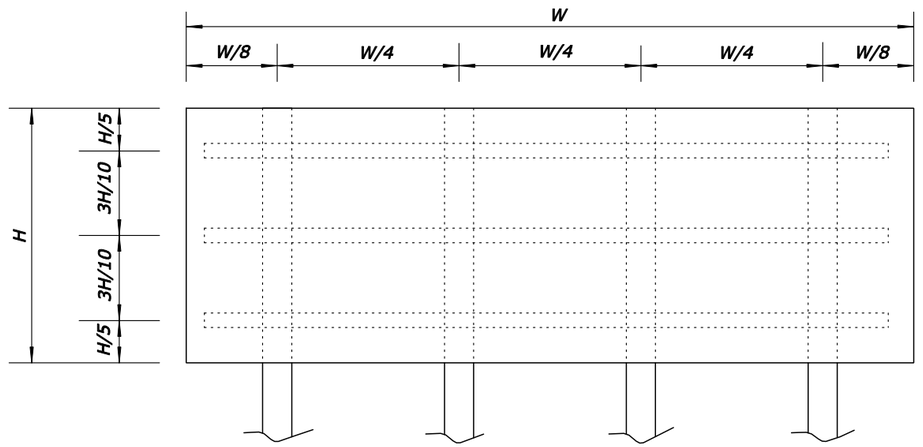
Notes:

1. Locations and height to be in accordance with the 'Manual on Uniform Traffic Control Devices for Streets and Highways' (MUTCD), latest edition.
2. Use wood battens bolted to post at vertical spacings not to exceed 30-inches.
3. Use double posts if W is over 3 feet.
4. For sign punching details, see the blank standards in the "Standard Highway Signs" as specified in the MUTCD, latest edition.
5. For steel posts, provide a ¼" x 6" soil plate. Use the same type of steel for the soil plate as for the post. Soil plate is not required for breakaway design.
6. For signs requiring posts sizes 6 x 6 and greater, signs are considered to be non-breakaway if multiple posts are required and posts cannot be spaced a minimum of 7 feet apart. Place non-breakaway signs outside the clearzone or shield with approved barrier. Do not place holes in posts of non-breakaway signs.
7. Depth, D, is to be in accordance with the 'Manual on Uniform Traffic Control Devices for Streets and Highways' (MUTCD), latest edition, Section 2A.21 and the AASHTO manual 'Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals', latest edition or as directed by the CO. D (min) is given in CHART A.



WITHOUT BATTEN **WITH BATTEN**

FASTENER DETAIL



QUADRUPLE POST

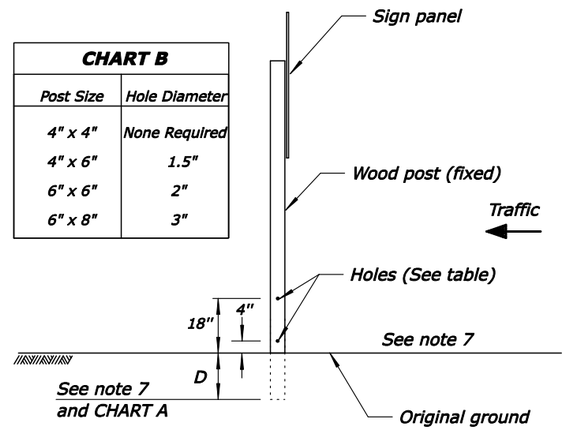
CHART A

Post Size (Inch)	D (min.) *	Maximum Sign Area (sq. ft.) Single Post	Double Post	Triple Post	Quadruple Post
4 x 4 (Wood)	3'	10	20		
4 x 6 (Wood)	4'	15	35	45	60
6 x 6 (Wood)	4'	20	50	75	100

* See note 7

CHART B

Post Size	Hole Diameter
4" x 4"	None Required
4" x 6"	1.5"
6" x 6"	2"
6" x 8"	3"



BREAKAWAY SUPPORT DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

SIGN STRUCTURES

DETAIL APPROVED FOR USE
REVISED: 03/07

DETAIL
E633-01

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-11

STEEL POST FOOTING DATA TABLE

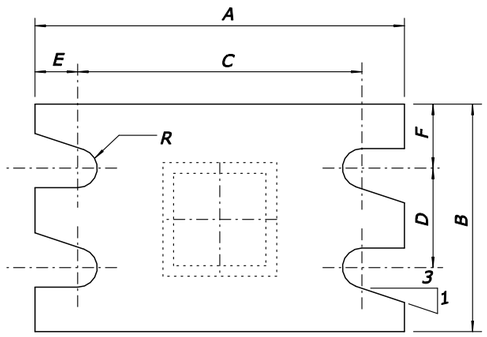
POST SIZE	NOMINAL SIZE (IN.)	STUB		FOOTING	
		PROJ.	LENGTH	DIA.	MINIMUM DEPTH
a	2 X 2	4"	2'	12"	3'
b	3 X 4	4"	2'	15"	3'
c	4 X 6	4"	2'	15"	3'

STEEL POSTS FOR GROUND MOUNTED SIGNS

POST SIZE	NOMINAL SIZE (IN.)	BOLT SPECIFICATIONS	BASE CONNECTION DATA TABLE (Inches)									
			A	B	C	D	E	F	t_1	t_2	w	R
a	2 X 2	5/8"Ø X 2 1/2" HS 450 IN. - LBS.	6 1/2	4	5	1 3/4	3/4	1 1/8	5/8	3/16	3/16	11/16
b	3 X 4		8 1/2	4	7	1 3/4	3/4	1 1/8	5/8	3/16	1/4	11/16
c	4 X 6	5/8"Ø X 3" HS 450 IN - LB	10	5	8 1/2	2 1/2	3/4	1 1/4	3/4	1/4	5/16	11/16

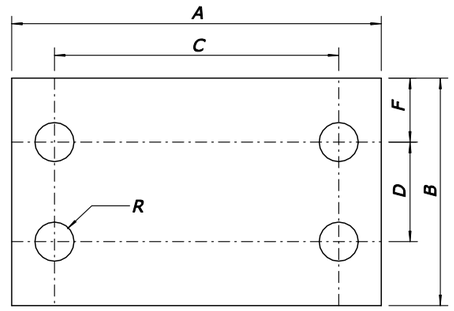
FUSE PLATE DATA TABLE (Inches)

POST SIZE	G	H	J	K	L	M	N	d_1	t_3	c_1	BOLT DIAM.	TORQUE FT.-LBS.
a	4	2 1/4	1 1/8	2	7/8	9/16	5/8	7/16	1/4	1/4	3/8	200
b	4	2 1/4	1 1/8	3	1 1/4	7/8	5/8	9/16	5/16	1/4	1/2	200
c	4 1/2	2 3/8	1 1/4	4	1 3/4	1 1/8	7/8	11/16	3/8	3/8	5/8	200

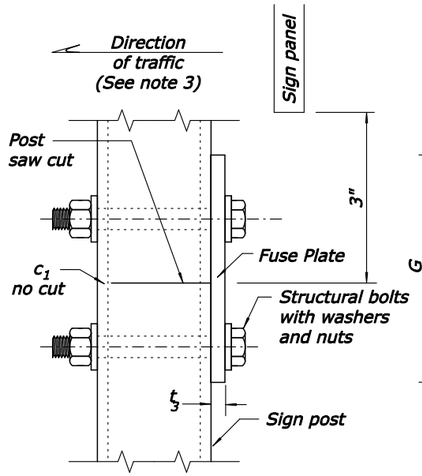


SECTION A-A

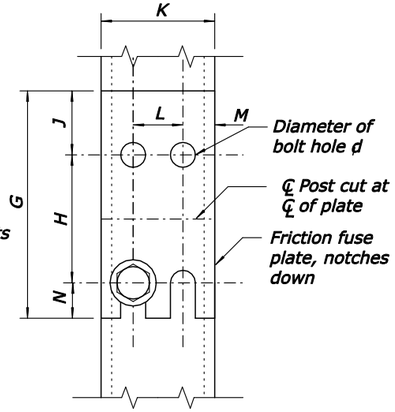
BREAKAWAY PLATE



BOND BREAKING PLATE



SIDE ELEVATION

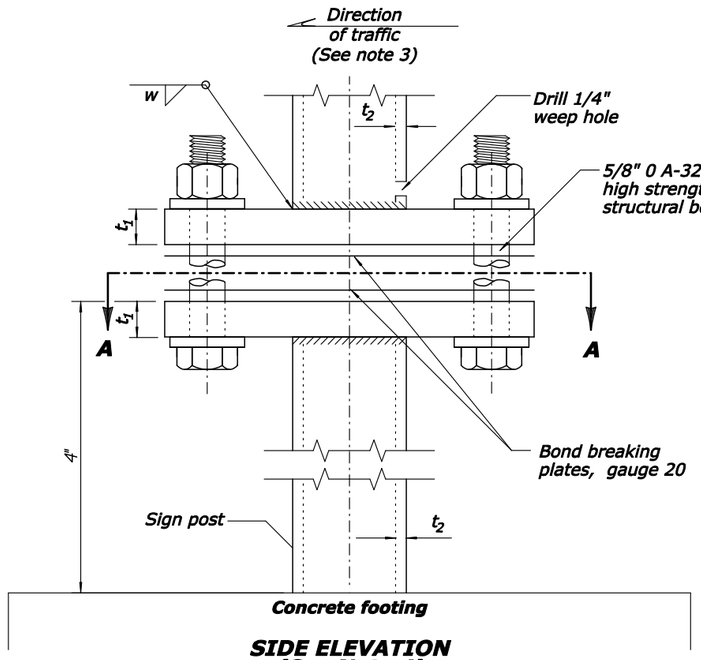


FRONT ELEVATION (See Note 5)

FUSE PLATE

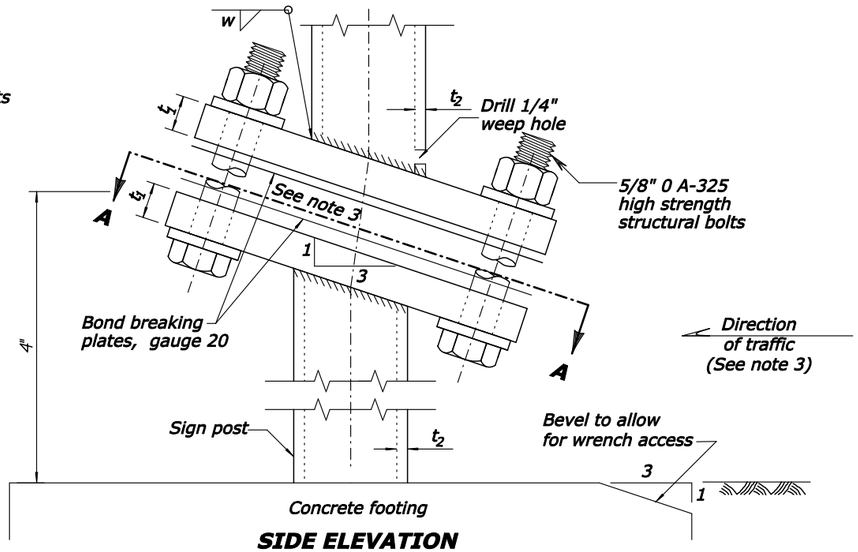
NOTES:

1. Breakaway design is not required for signs placed behind protective barriers.
2. Breakaway assembly to be installed in the direction of major traffic.
3. The multiple post breakaway detail to be used on single posts in medians where exposed to opposing lanes of traffic.
4. Fuse plates are to be used on multiple post installations only.
5. The breakaway plates, only are to be painted brown to match the final appearance of the weathering steel posts.



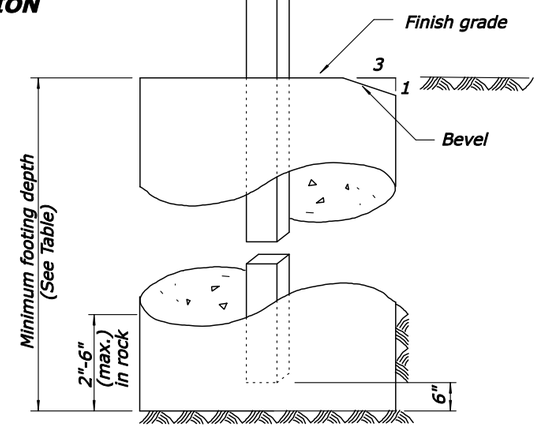
SIDE ELEVATION (See Note 4)

MULTIPLE POST



SIDE ELEVATION

SINGLE POST



CONCRETE FOOTING DETAILS

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

BREAKAWAY SIGN SUPPORT, STEEL

DETAIL APPROVED FOR USE	DETAIL
REVISED: 07/98 03/07	E633-2A

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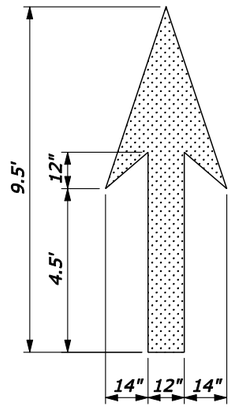
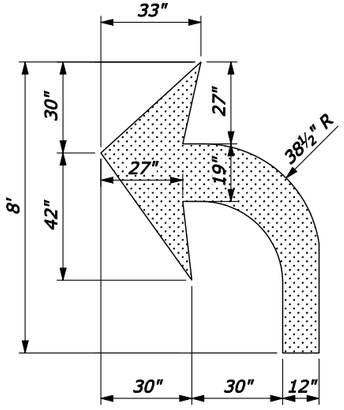
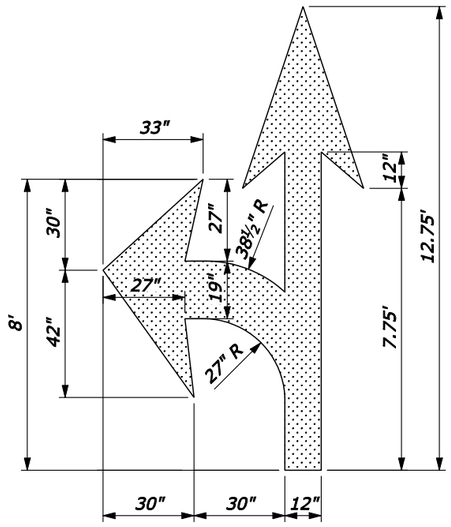
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-12



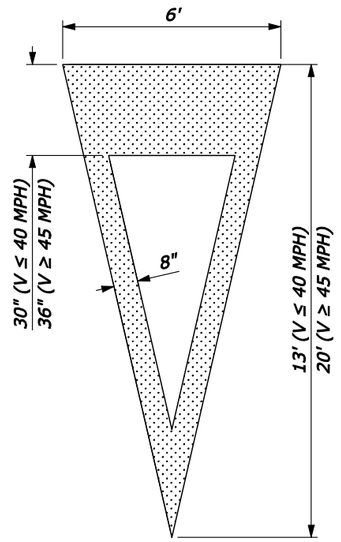
THROUGH LANE-USE ARROW



TURN LANE-USE ARROW



TURN AND THROUGH LANE-USE ARROW



YIELD AHEAD TRIANGLE SYMBOL

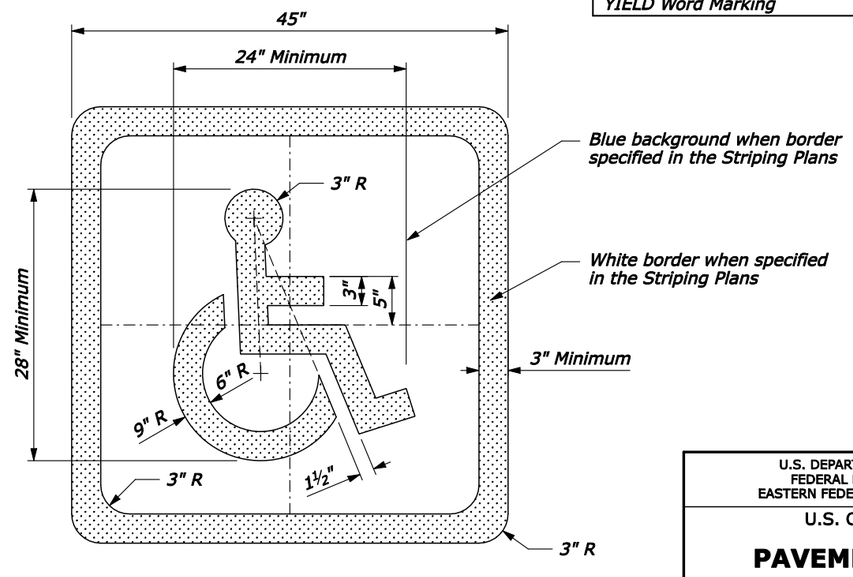
"STOP" WORD MARKING

"YIELD" WORD MARKING

"ONLY" WORD MARKING

"AHEAD" WORD MARKING

"SCHOOL" WORD MARKING



ACCESSIBILITY PARKING SPACE MARKING

NO SCALE

NOTE:

1. Place pavement word and symbol markings in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), current edition.
2. All letters, numerals and symbols shall conform with the "Standard Highway Signs", current edition.
3. The Accessibility Parking Space marking only includes the accessibility symbol unless a border is indicated in the Striping Plans.

PAVEMENT MARKING AREAS

TYPE	SQFT
Through Lane-Use Arrow	12
Turn Lane-Use Arrow	16
Turn and Through Lane-Use Arrow	26
Yield Ahead Arrow (V<70 km/h)	26
Yield Ahead Arrow (V≥70 km/h)	37
Accessibility Marking (symbol only)	2
Accessibility Marking w/ border (White)	5
Accessibility Marking w/ border (Blue)	9
AHEAD Word Marking	30
ONLY Word Marking	21
SCHOOL Word Marking	33
STOP Word Marking	22
YIELD Word Marking	24

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PAVEMENT MARKINGS SYMBOLS AND WORDS

DETAIL APPROVED FOR USE 3/2003
REVISED: 06/2007

DETAIL E634-01

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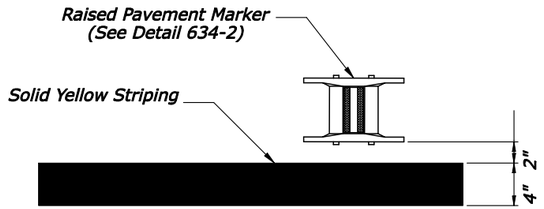
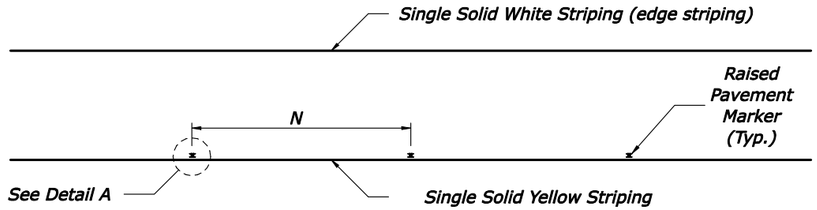
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-13



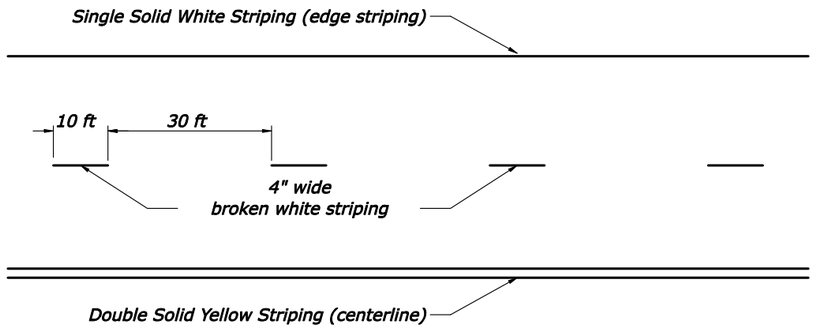
DETAIL A



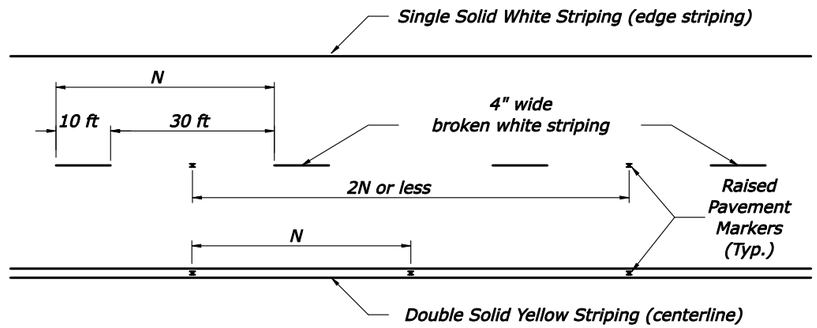
SINGLE SOLID YELLOW STRIPING WITH RAISED PAVEMENT MARKERS

NOTES:

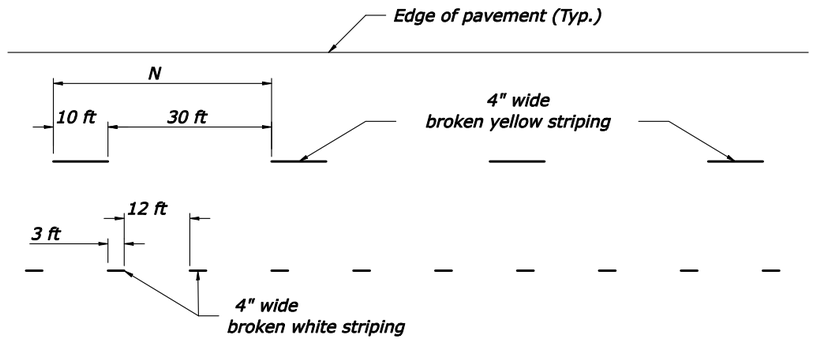
1. All striping shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) latest edition.
2. Space and install Raised Pavement Markers in accordance with the MUTCD and as shown in this detail or as directed by the CO.



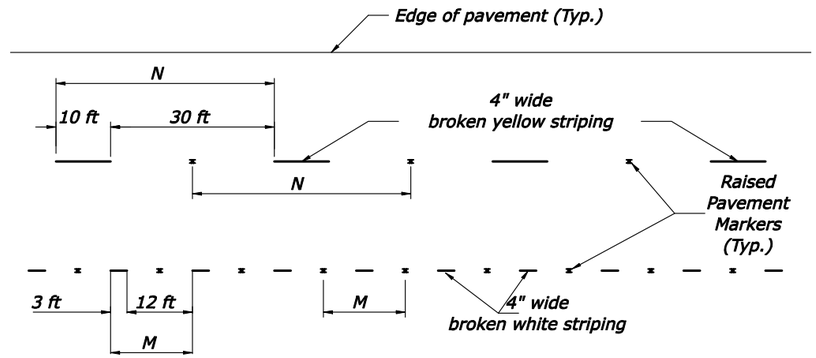
BROKEN SINGLE WHITE AND DOUBLE SOLID YELLOW STRIPING



BROKEN SINGLE WHITE AND DOUBLE SOLID YELLOW STRIPING WITH RAISED PAVEMENT MARKERS



BROKEN SINGLE YELLOW AND DOTTED WHITE STRIPING



BROKEN SINGLE YELLOW AND DOTTED WHITE STRIPING WITH RAISED PAVEMENT MARKERS

NO SCALE

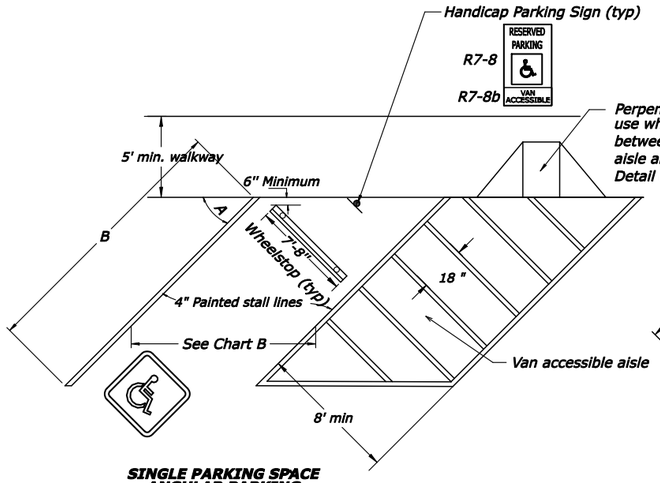
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

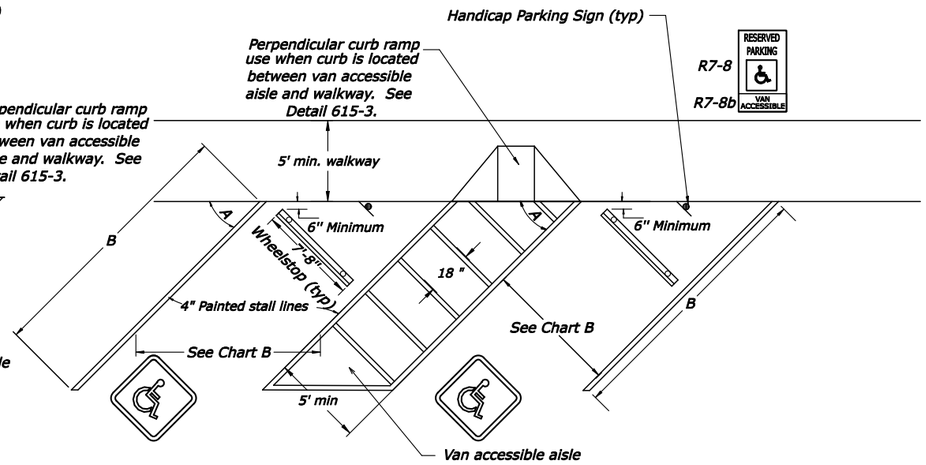
PAVEMENT MARKINGS WITH AND WITHOUT RAISED PAVEMENT MARKERS

DETAIL APPROVED FOR USE 10/94	DETAIL
REVISED: 11/94 03/2007	E634-03

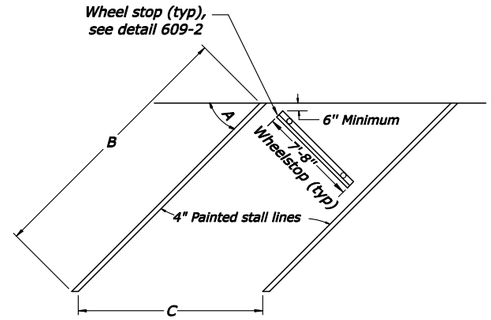
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-14



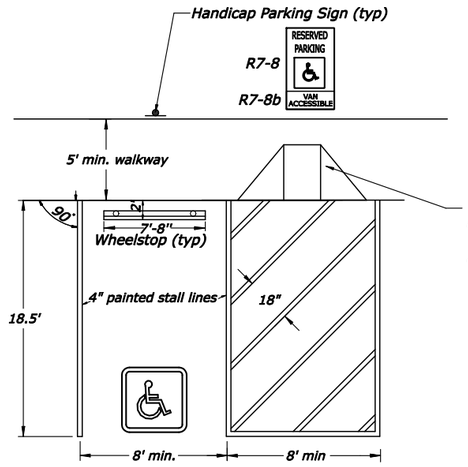
SINGLE PARKING SPACE ANGULAR PARKING WITH VAN ACCESSIBLE AISLE FOR HANDICAP ACCESS



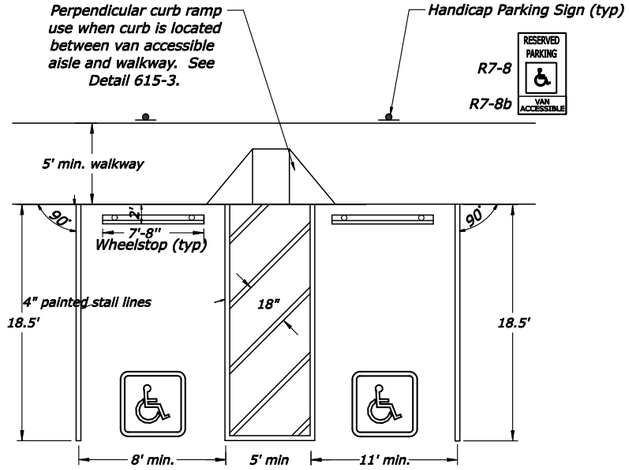
DOUBLE PARKING SPACE ANGULAR PARKING WITH VAN ACCESSIBLE AISLE FOR HANDICAP ACCESS



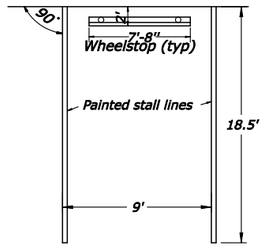
ANGULAR PARKING



SINGLE PARKING SPACE HEAD-ON PARKING WITH VAN ACCESSIBLE AISLE FOR HANDICAP ACCESS



DOUBLE PARKING SPACE HEAD-ON PARKING WITH VAN ACCESSIBLE AISLE FOR HANDICAP ACCESS



HEAD-ON PARKING

CHART A

*Required Accessible Spaces in Parking Areas**

Total Parking Spaces in Parking Area	Required Minimum Number of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2 percent of total
over 1,000	20 plus 1 for each 100

* Chart based on "Americans with Disibilities Act" Design Guide.

CHART B

*Parking Layout Dimensions for 9-ft. wide stalls**

Angle A	45°	60°	75°	90°
Minimum Length of stall B	25'	22'	20'	18.5'
Stall width, C, parallel to aisle	12.7'	10.4'	9.3'	9.0'

* Chart based on dimensions recommended in "Parking Principles".

NO SCALE

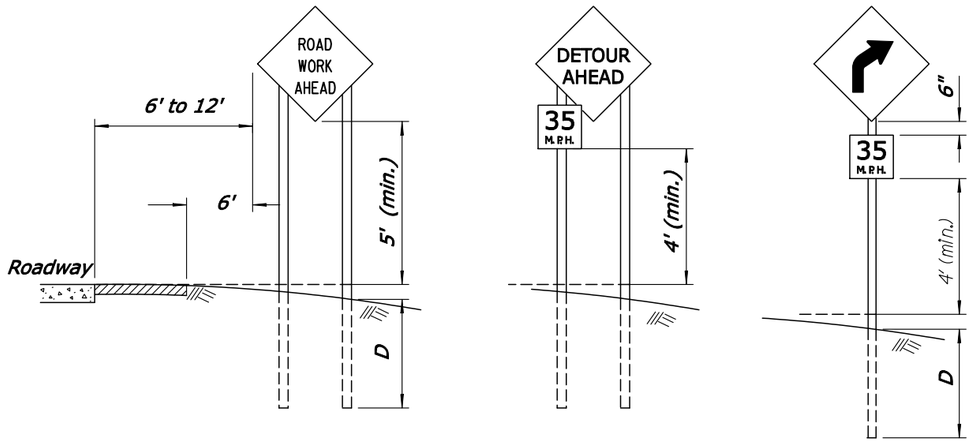
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

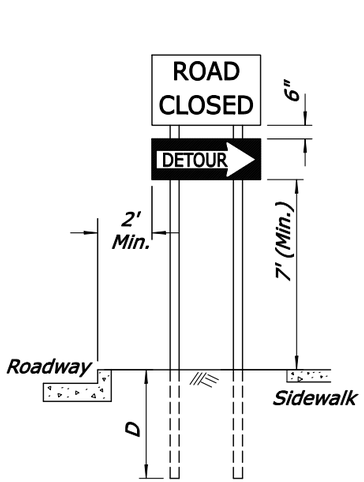
PAVEMENT MARKINGS IN PARKING AREAS

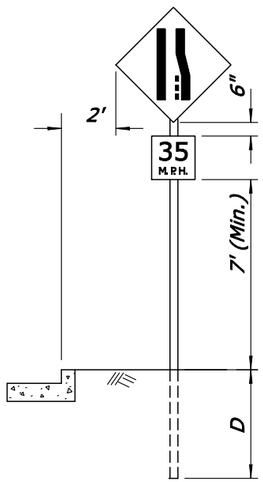
DETAIL APPROVED FOR USE	DETAIL
REVISED:	E634-05

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-15

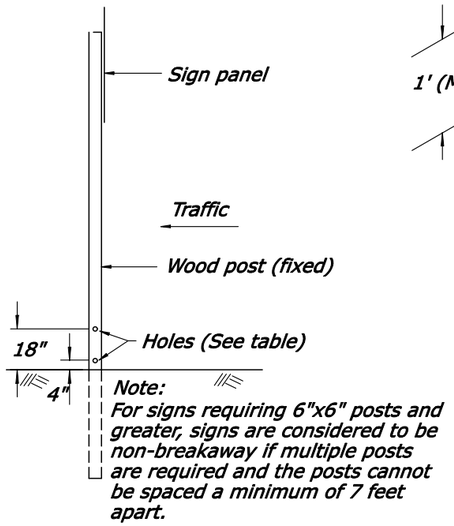


RURAL AREA



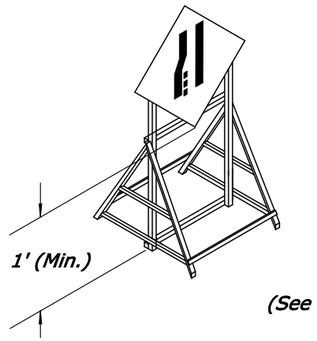


URBAN AREA

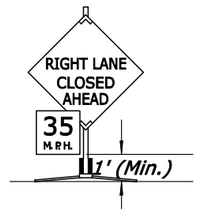


Note:
For signs requiring 6"x6" posts and greater, signs are considered to be non-breakaway if multiple posts are required and the posts cannot be spaced a minimum of 7 feet apart.

BREAKAWAY SUPPORT DETAIL
(FIXED SIGNS - 4" x 6" AND GREATER POSTS)



(See note 5)



PORTABLE SIGNS
(See note 4)

Notes:

1. Wood posts are 4"x 4" unless otherwise indicated.
2. Mount signs that are wider than 3-feet or larger than 10 square feet on double posts.
3. All lumber dimensions are nominal.
4. The Contractor may submit alternate details for portable signs, however, sign mounts hold the sign face in a vertical plane. Portable signs may be mounted lower than fixed signs when approved by the CO. Ensure all portable sign supports meet the requirements of NCHRP-350 for crashworthiness.
5. When parking is permitted within 200 feet of the sign, mount the sign a minimum of 7 feet above the pavement surface.
6. When approved by the CO and the Utility Company, utility poles may be used for sign mounting.
7. For posts greater than 4" x 4" see the Breakaway Support Detail. If breakaway design cannot be used, due to post spacing, the sign should be placed outside the clearzone or be shielded by barrier. Do not place holes in posts of non-breakaway signs

FIXED ROADWAY SIGNS

Post size	D	Hole Dia.	Maximum Sign Area - Sq. ft.			
			1 Post	2 Posts	3 Posts	4 Posts
4" x 4"	4'	None Req'd	10	20		
4" x 6"	4'	1.5"		35	50	70
6" x 6"	5'	2"		50	75	100
6" x 8"	5'	3"		85	125	165

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

CONSTRUCTION TRAFFIC CONTROL SIGN MOUNTING

DETAIL APPROVED FOR USE 02/2007

REVISED: 02/07 06/07

DETAIL
E635-01

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-16

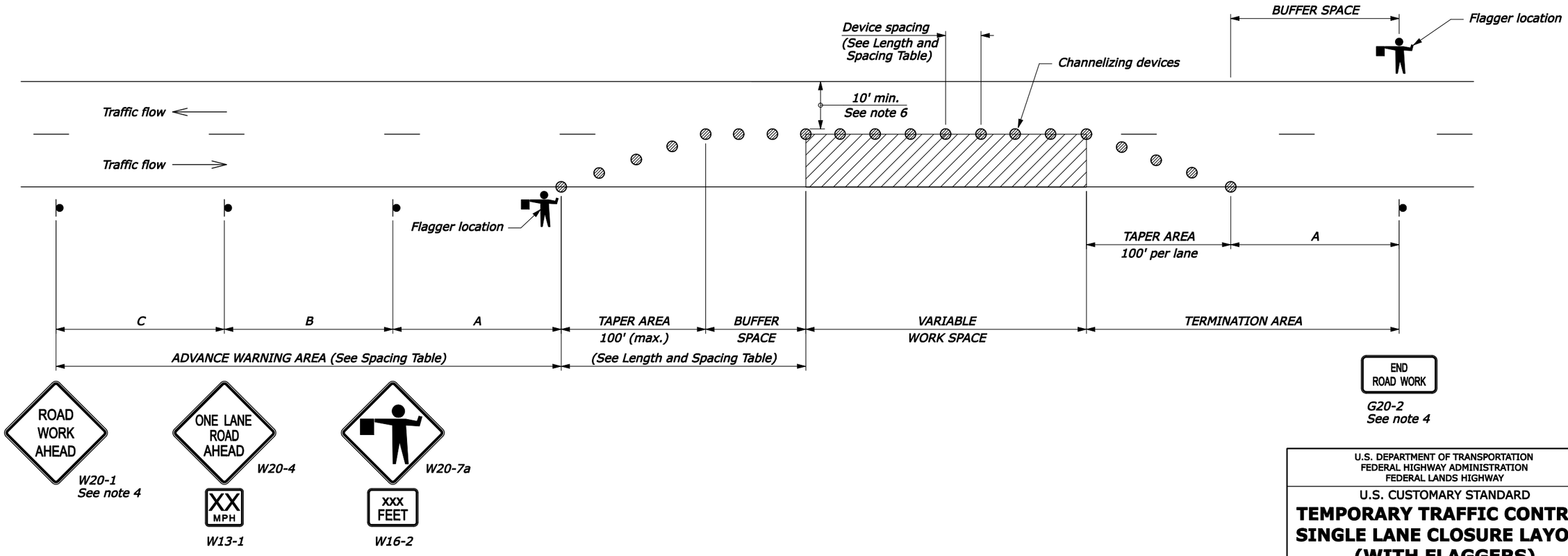
LENGTH AND SPACING TABLE				
APPROACH SPEED*	LENGTH OF BUFFER SPACE	CHANNELIZING DEVICE		
		TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	SPACING IN FEET		
25	155	20	50	50
30	200	20	60	60
35	250	20	70	70
40	305	20	80	80
45	360	20	90	90
50	425	20	100	100
55	495	20	110	110

* Approach speed based on the regulatory posted speed, not the advisory speed.

SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban 40 MPH and less	100	100	100
Urban 45 MPH and greater	350	350	350
Rural	500	500	500
Expressway/Freeway	1000	1500	2640

NOTE:

1. Signs are shown for one direction of travel only. Place devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the name of the contractor on the pilot car.
4. If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. Refer to Special Contract Requirements, Section 156, for project specific minimum width.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
8. If signs will be in place more than 72 consecutive hours, use ground-mounted post.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)

STANDARD APPROVED FOR USE 6/2005

REVISED:

STANDARD 635-6

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REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	S-17

LENGTH AND SPACING TABLE

APPROACH SPEED*	MINIMUM TAPER LENGTH**	LENGTH OF BUFFER SPACE	CHANNELIZING DEVICE		
			TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	FEET	SPACING IN FEET		
25	Shoulder taper formula:	155	25	50	50
30	$L = \frac{WS^2}{180}$ for S ≤ 40 MPH	200	30	60	60
35	$L = \frac{WS}{3}$ for S ≥ 45 MPH	250	35	70	70
40	Where:	305	40	80	80
45	L = Minimum length of taper	360	45	90	90
50	W = Width of offset in feet	425	50	100	100
55	S = Numerical value of posted speed limit or 85 percentile speed prior to work in miles per hour	495	55	110	110

* Approach speed based on the regulatory posted speed, not the advisory speed.

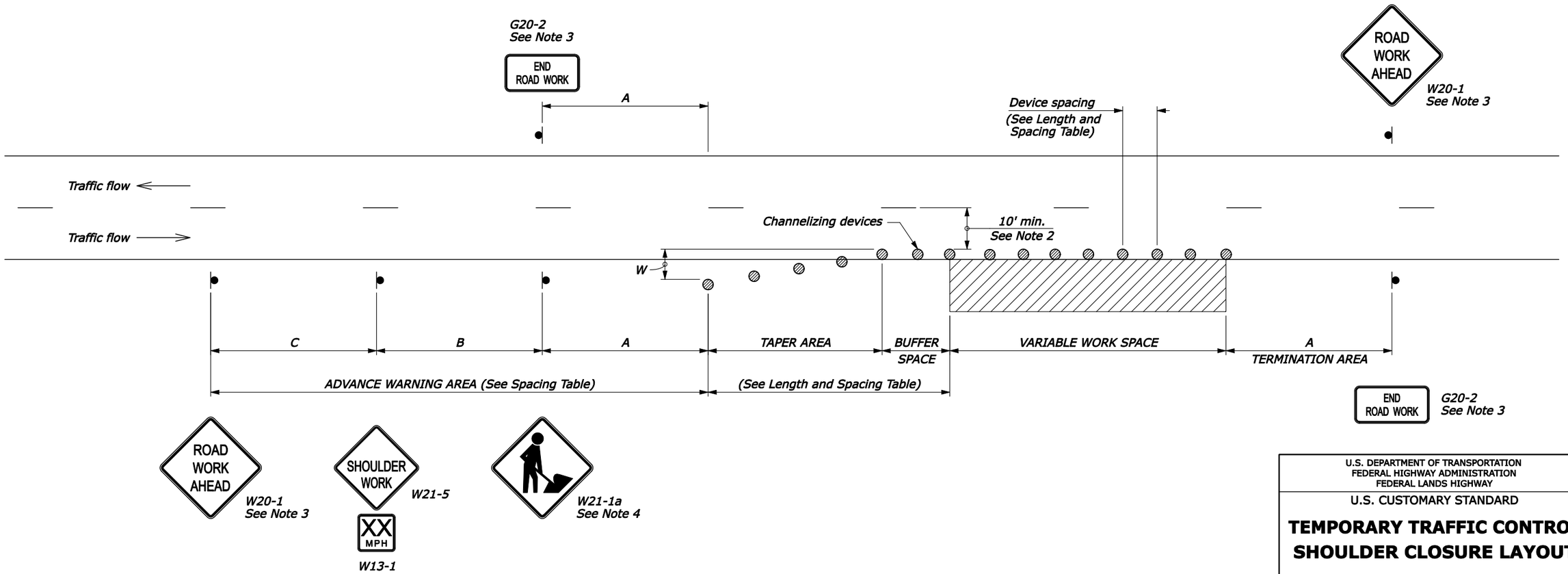
** Lengthen taper as needed to provide minimum of three channelizing devices in taper at required spacing.

SIGN SPACING TABLE

ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban 40 MPH and less	100	100	100
Urban 45 MPH and greater	350	350	350
Rural	500	500	500
Expressway/Freeway	1000	1500	2640

NOTE:

1. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
2. For project specific minimum width, refer to Special Contract Requirements, Section 156.
3. If shoulder closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
4. Remove or cover Workers symbol sign (W21-1a) when workers are not present.
5. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
6. If signs will be in place more than 72 consecutive hours, use ground-mounted post.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

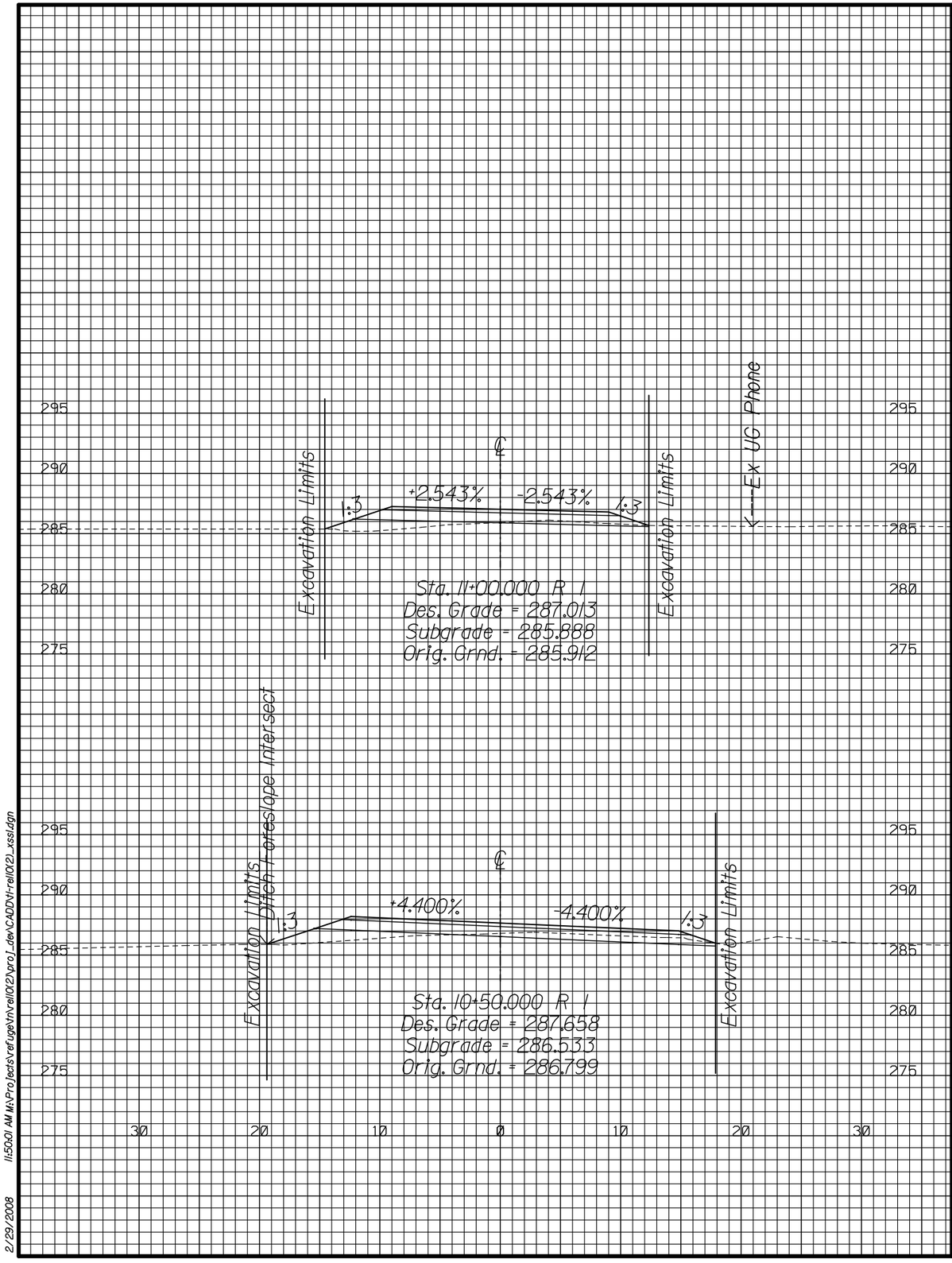
TEMPORARY TRAFFIC CONTROL SHOULDER CLOSURE LAYOUT

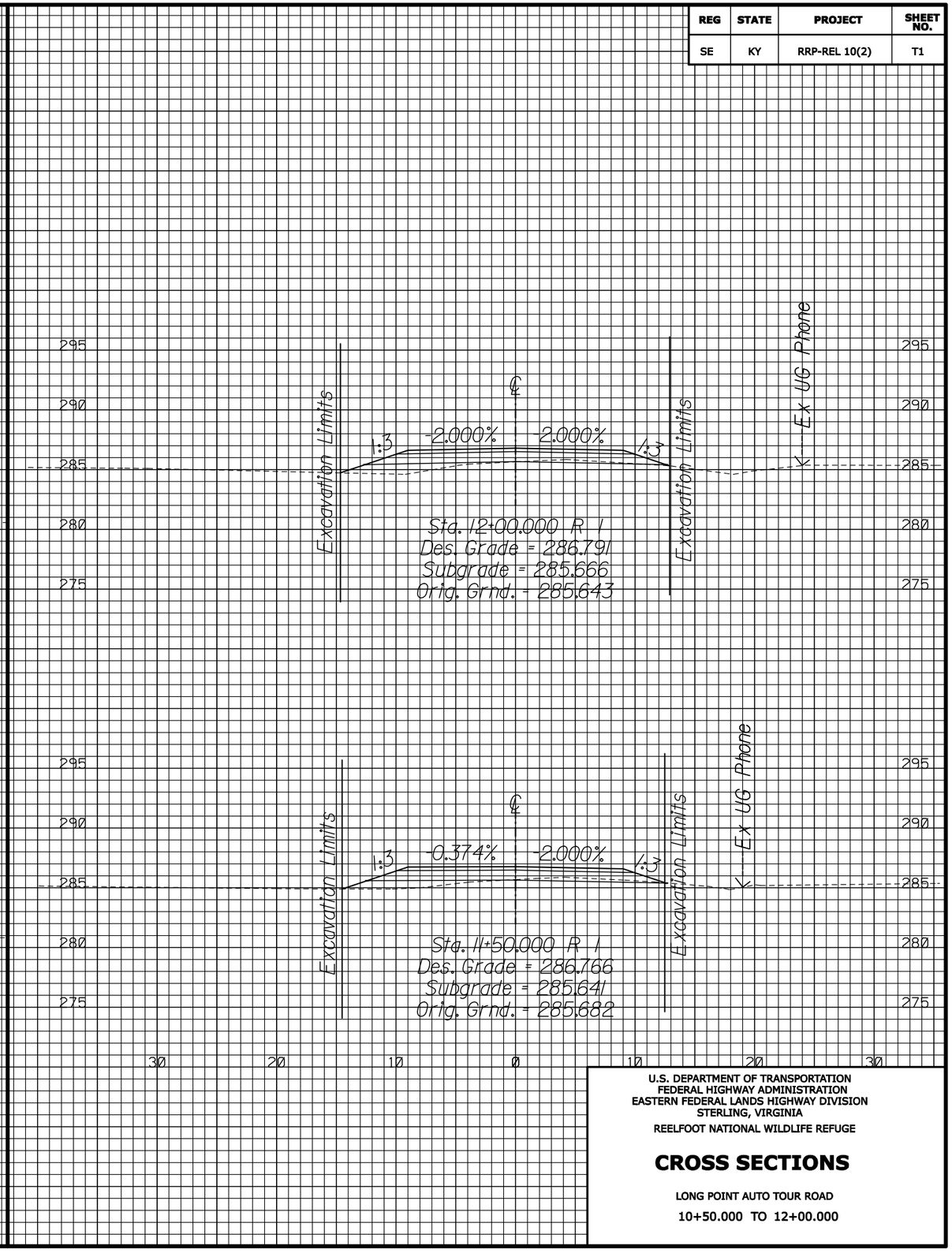
STANDARD APPROVED FOR USE 6/2005

REVISED:
DRAFT: 1/2007

STANDARD
635-10

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T1





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

10+50.000 TO 12+00.000

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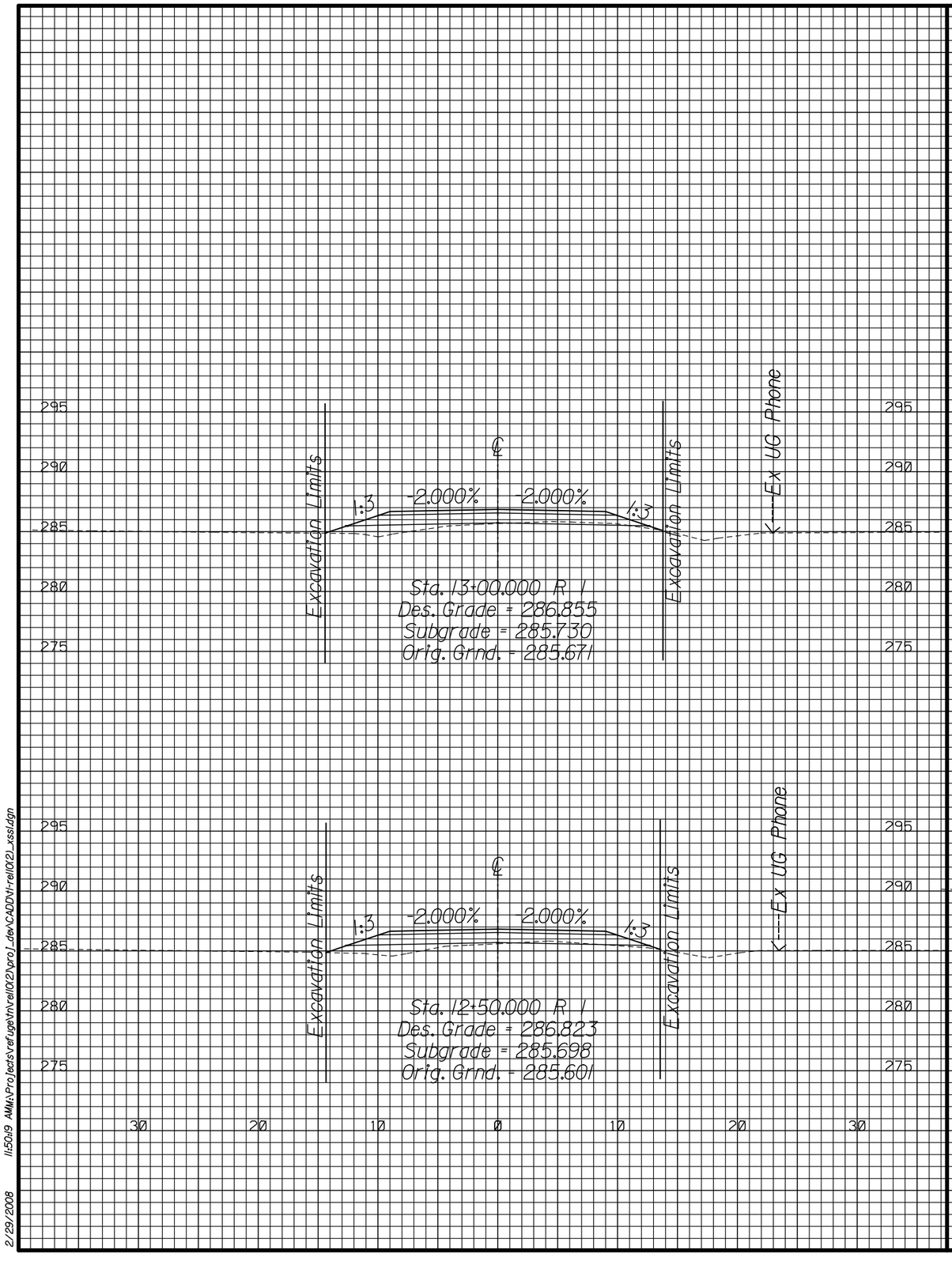
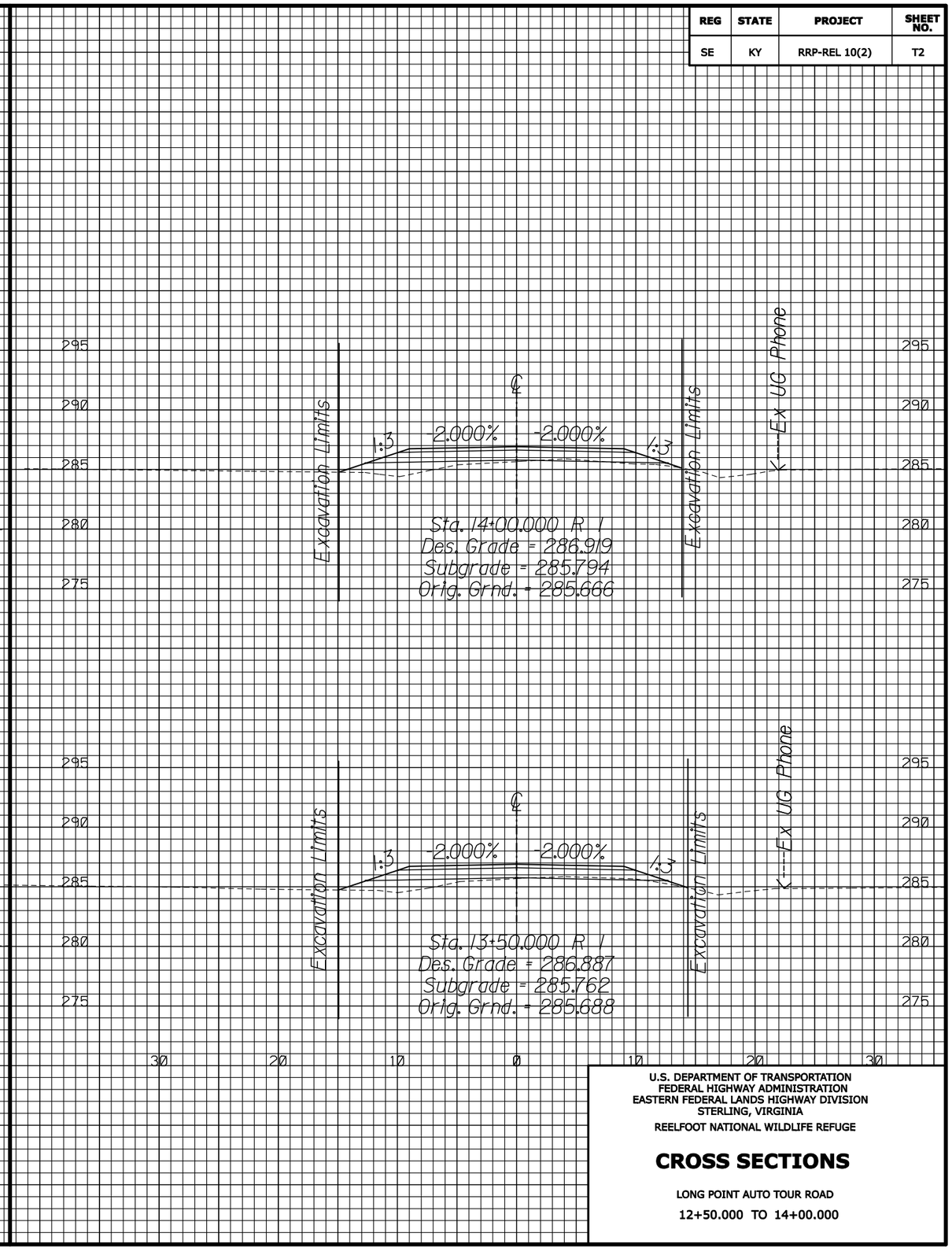
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T2





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FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

12+50.000 TO 14+00.000

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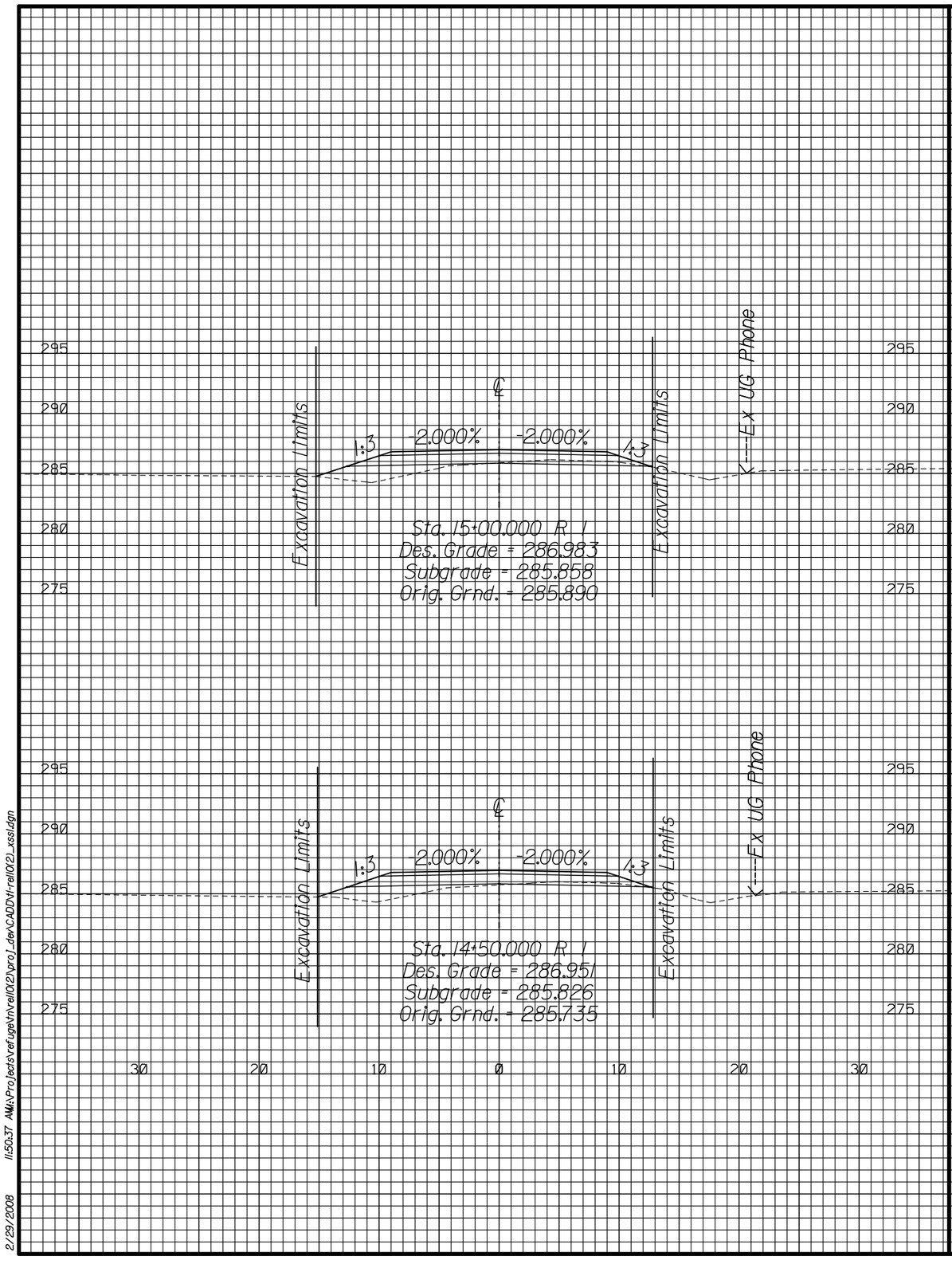
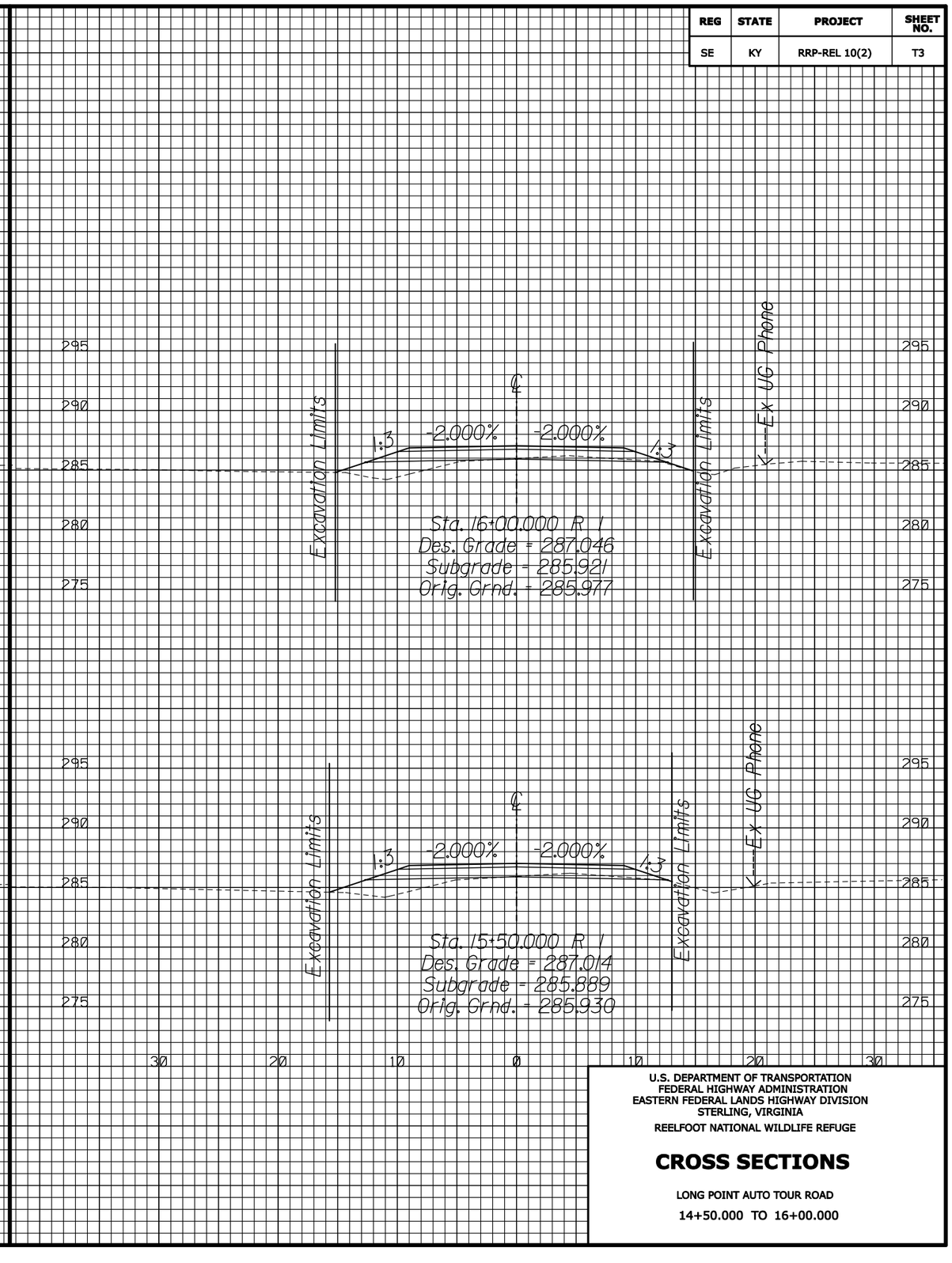
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T3





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FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

14+50.000 TO 16+00.000

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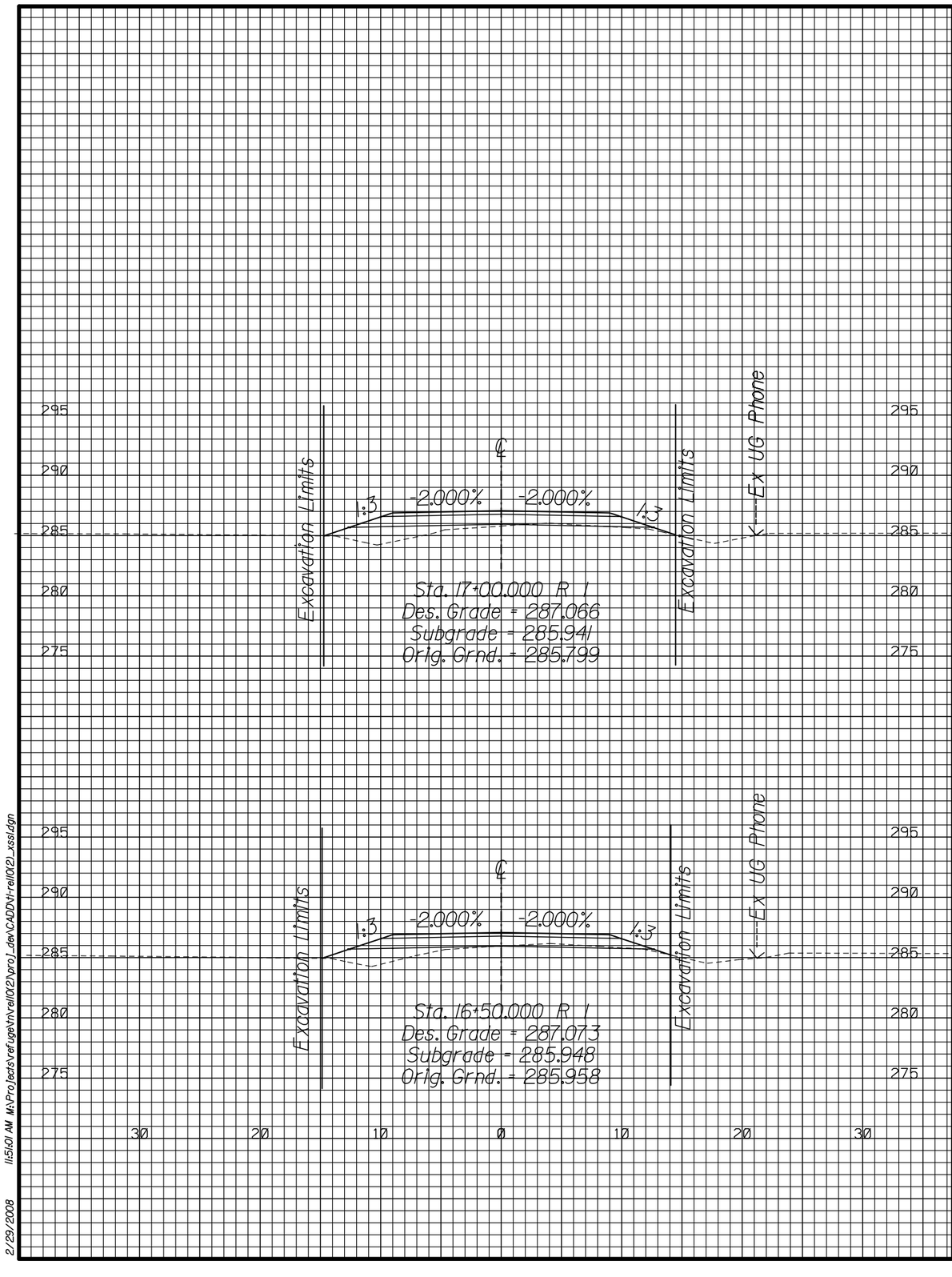
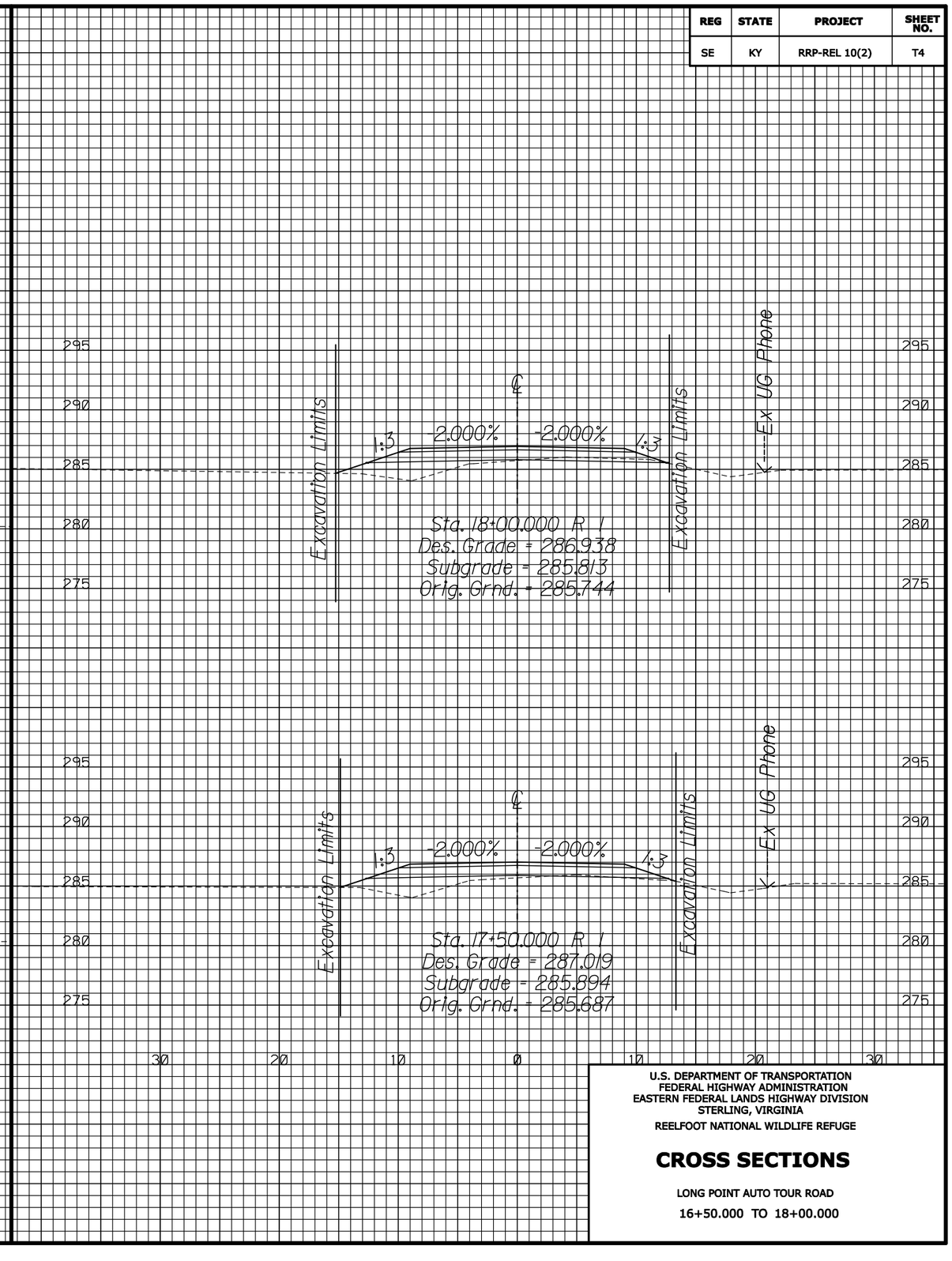
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T4





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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

16+50.000 TO 18+00.000

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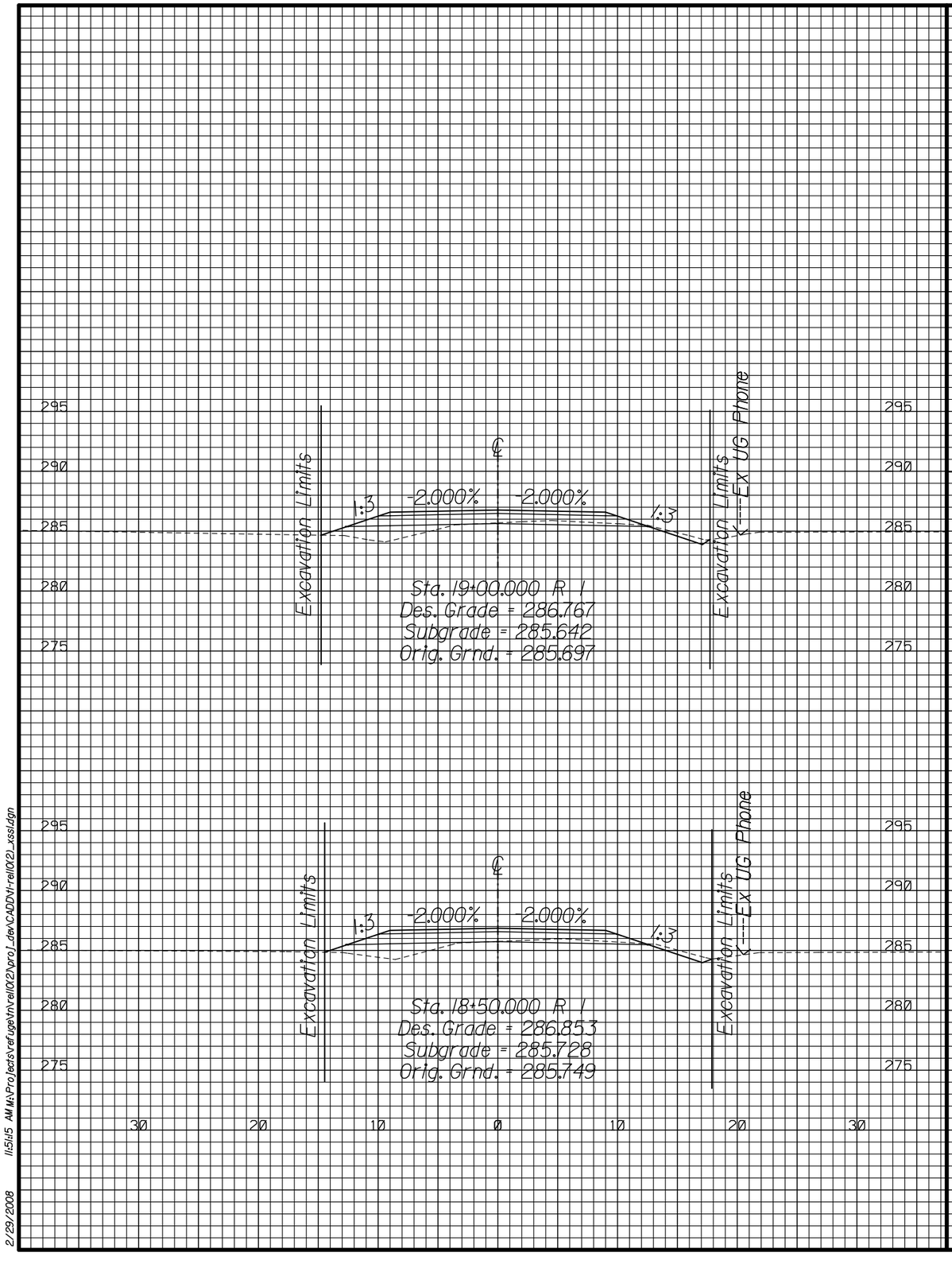
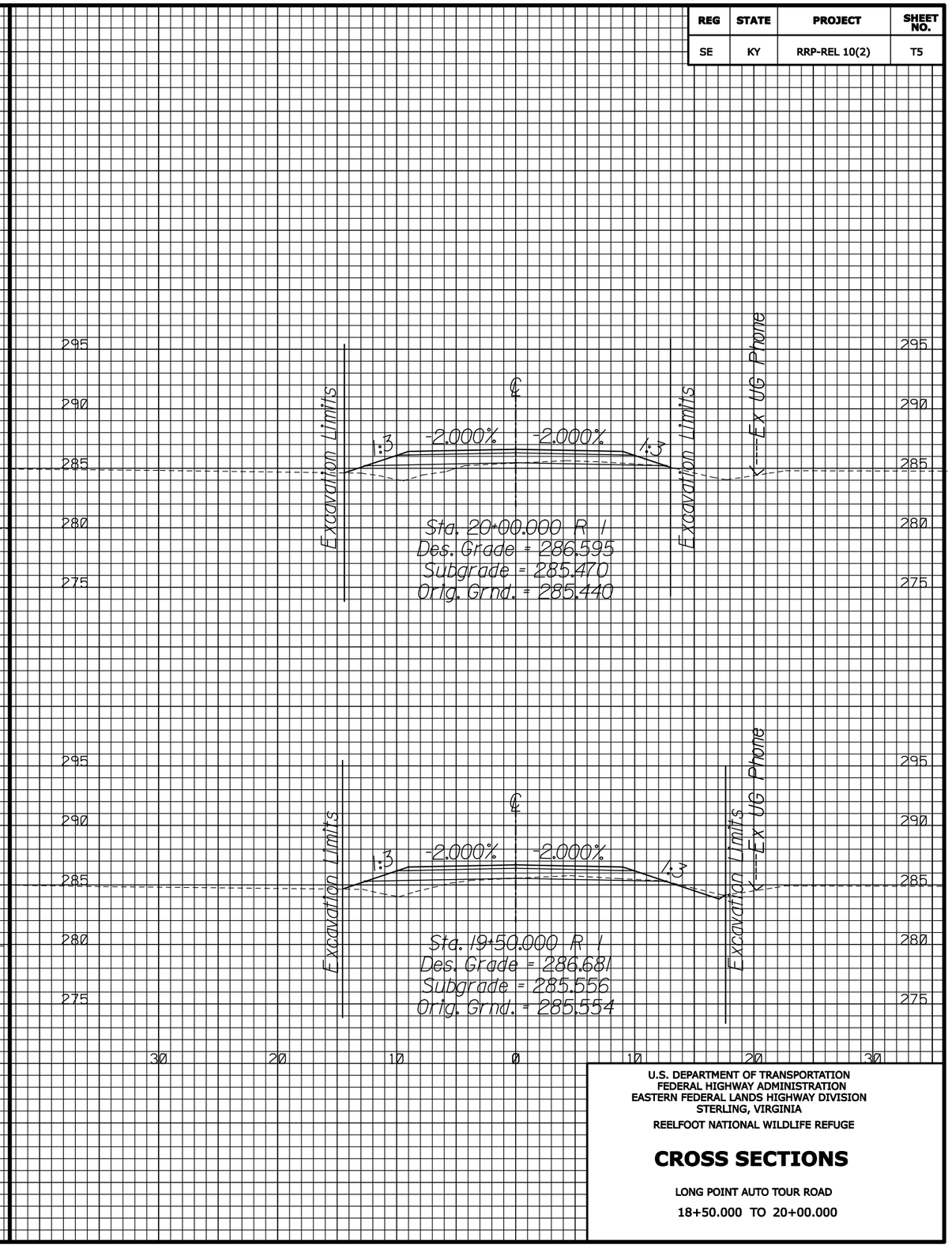
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T5





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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

18+50.000 TO 20+00.000

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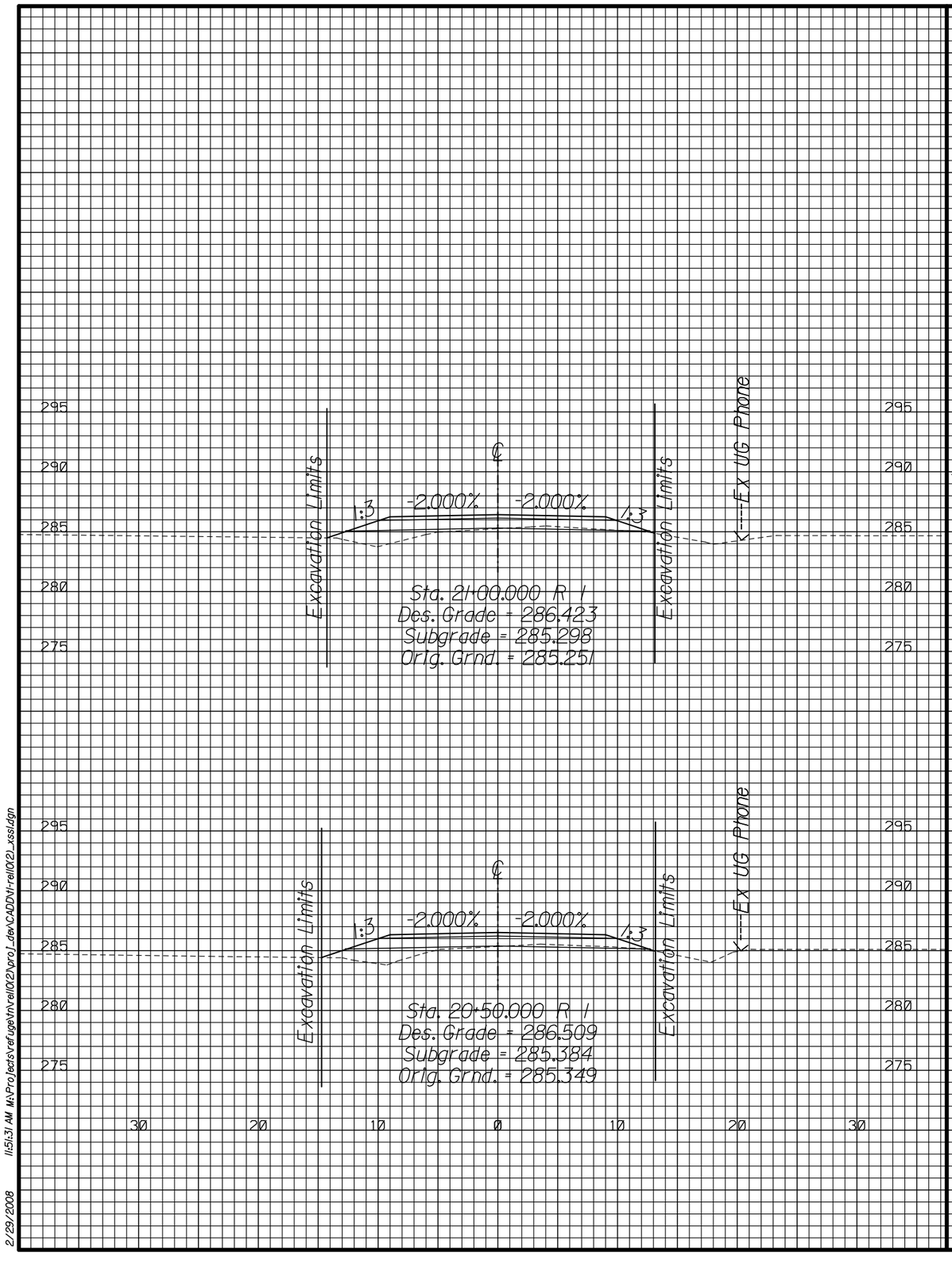
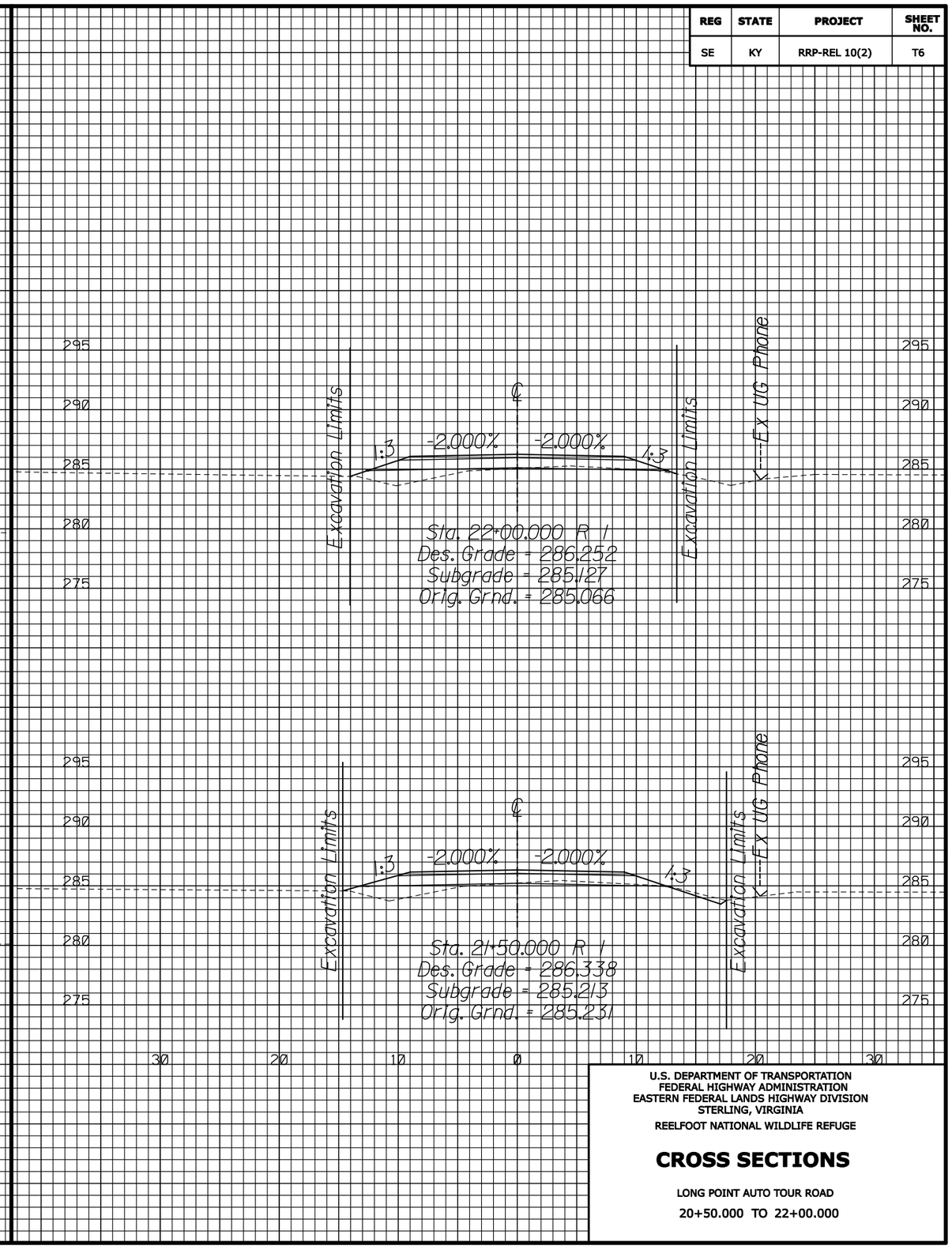
SE	KY	RRP-REL 10(2)	T6





U.S. DEPARTMENT OF TRANSPORTATION
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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

20+50.000 TO 22+00.000

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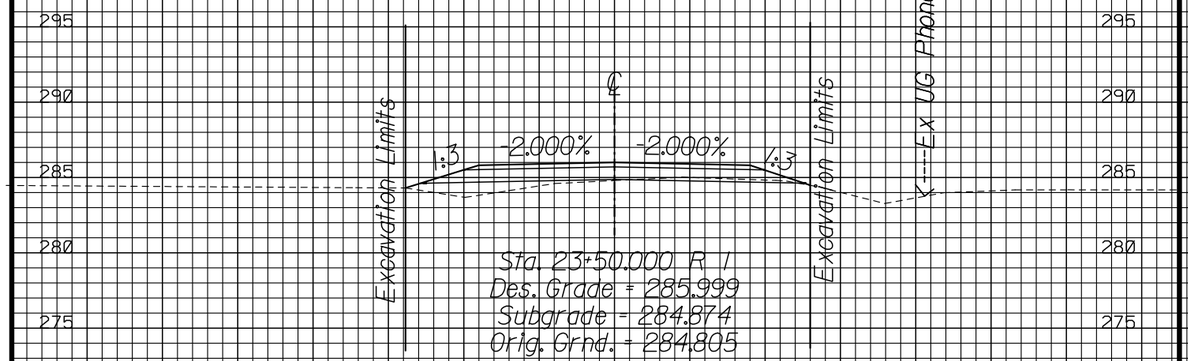
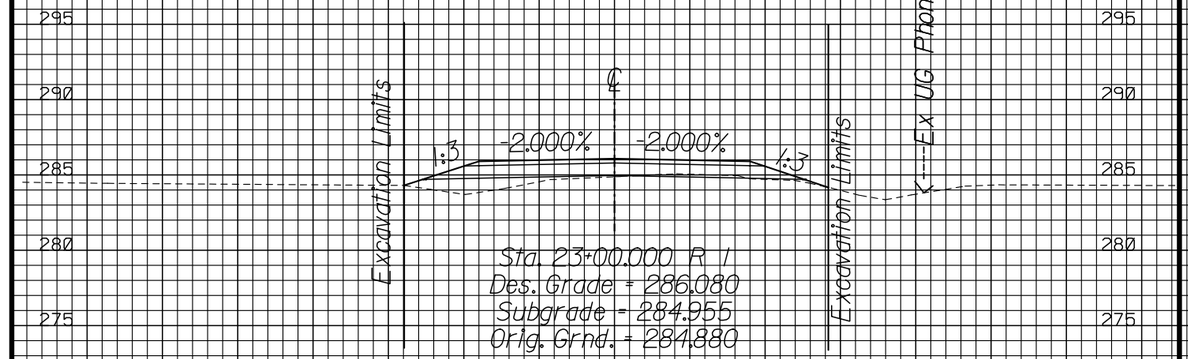
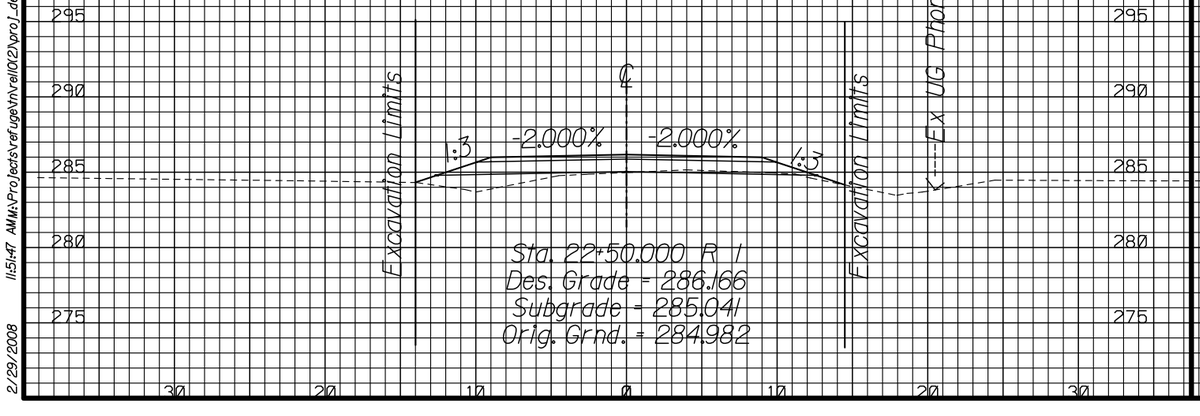
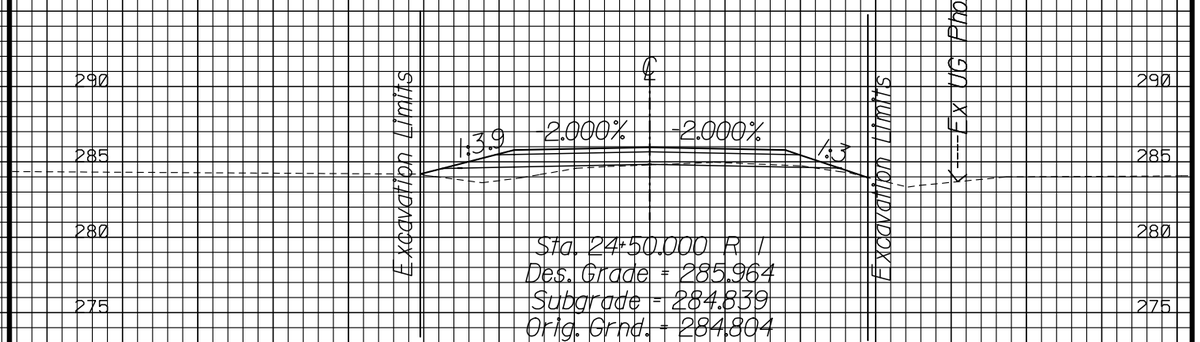
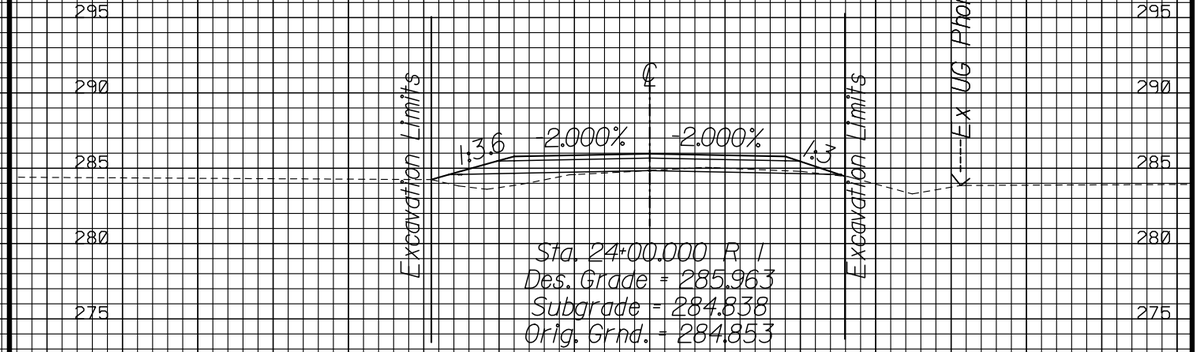
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T7











U.S. DEPARTMENT OF TRANSPORTATION
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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

22+50.000 TO 24+50.000

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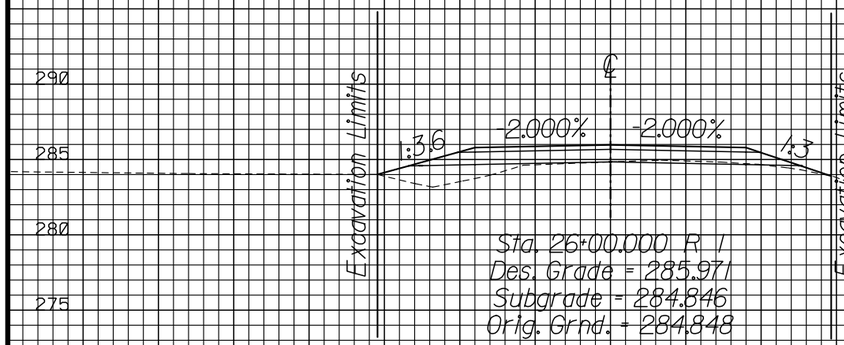
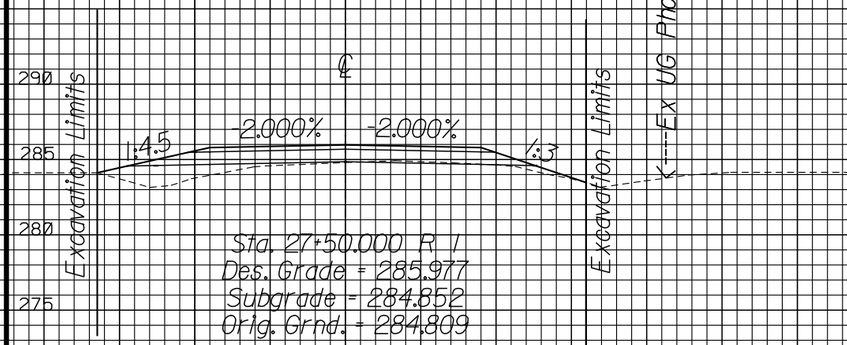
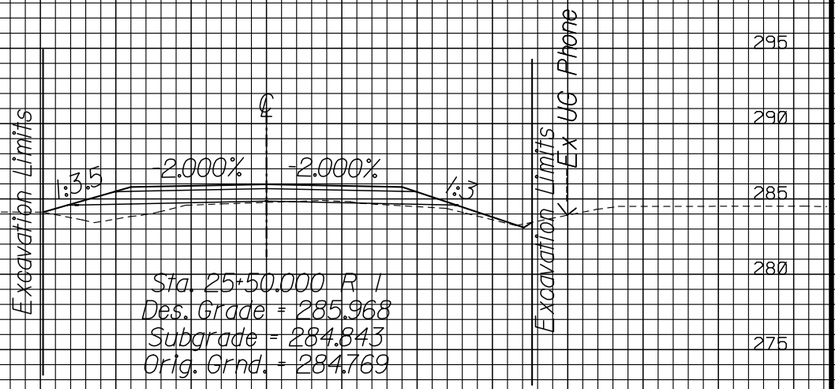
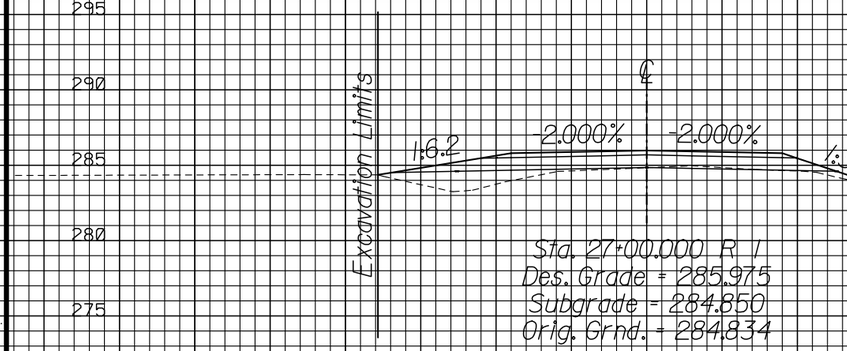
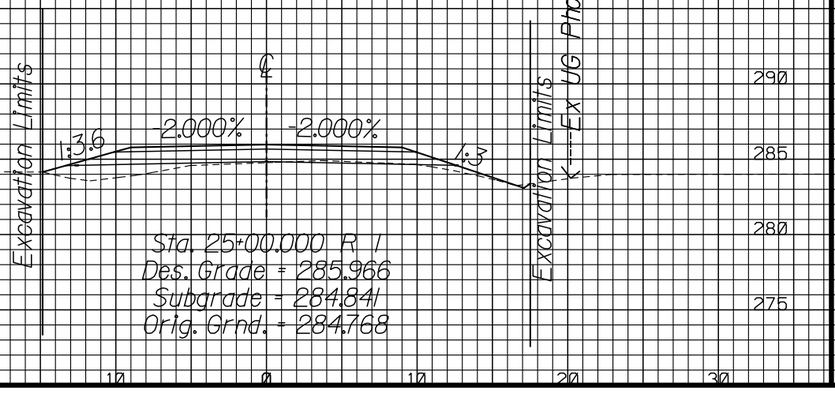
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T8

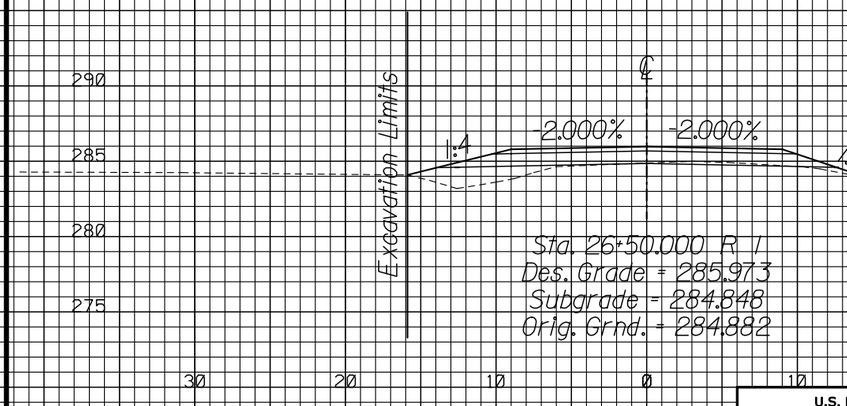












U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

25+00.000 TO 27+50.000

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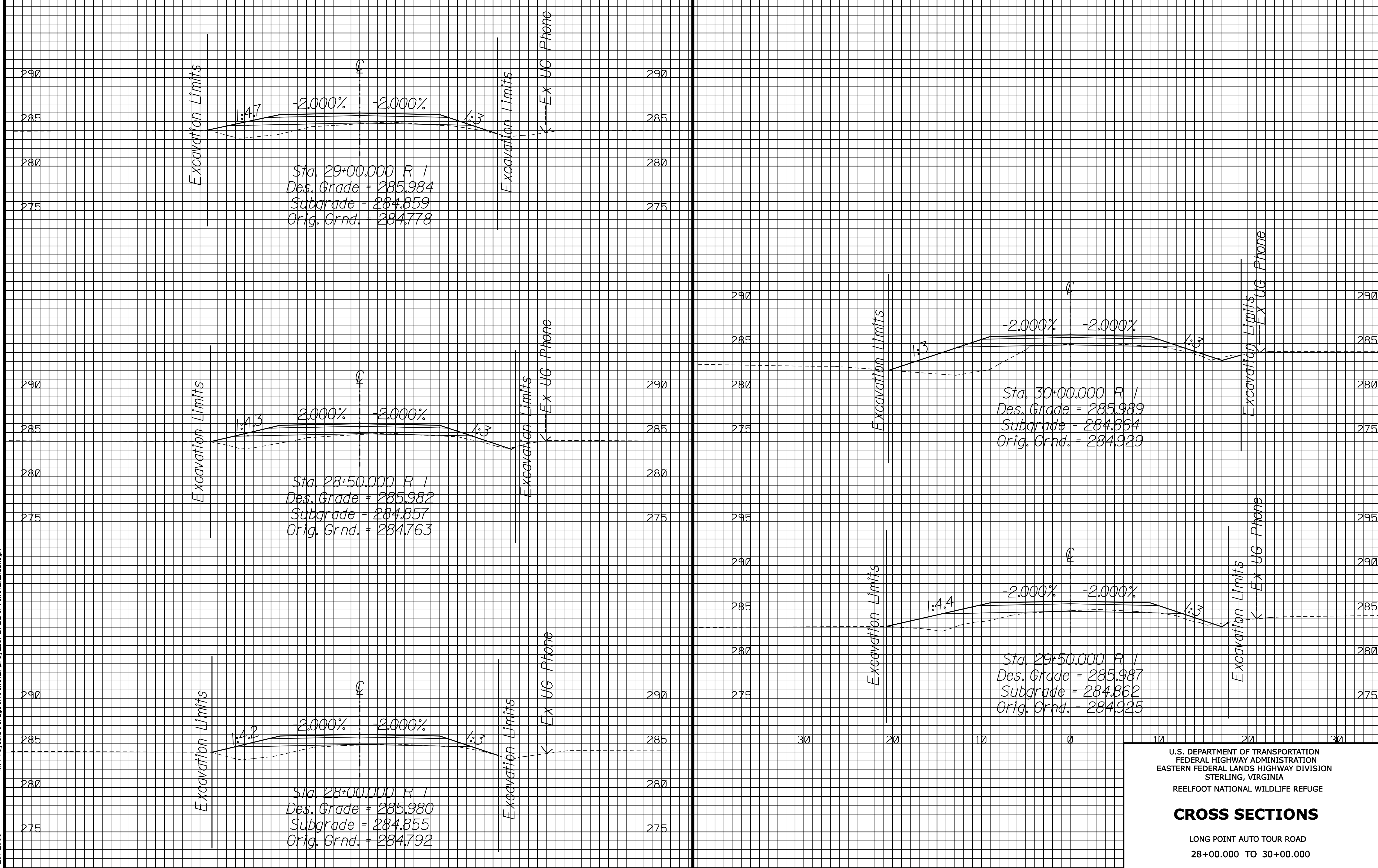
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T9



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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

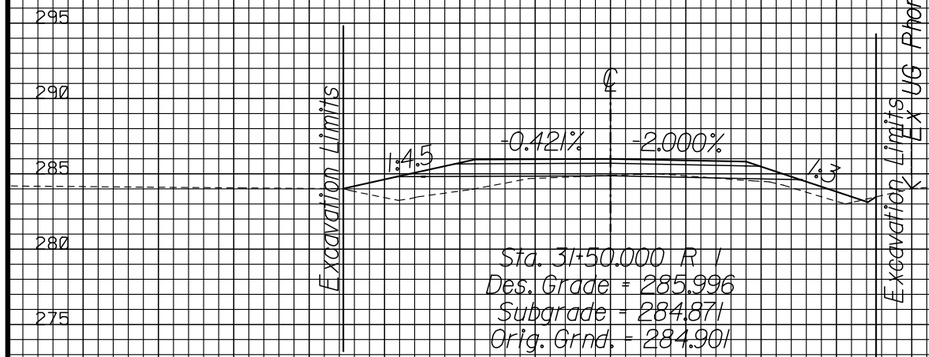
REELFOOT NATIONAL WILDLIFE REFUGE

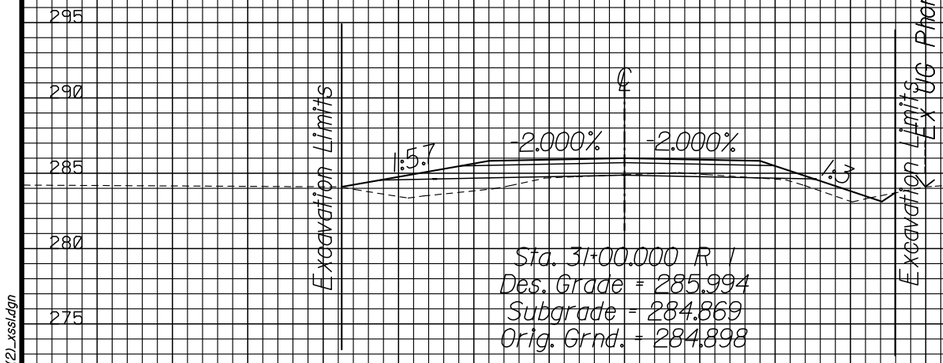
CROSS SECTIONS

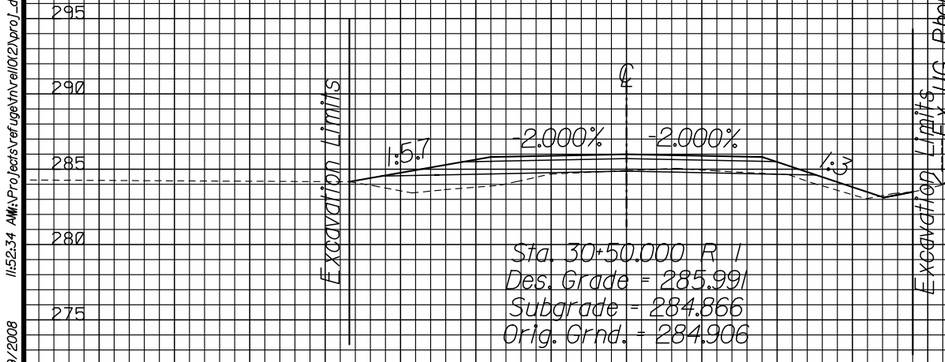
LONG POINT AUTO TOUR ROAD

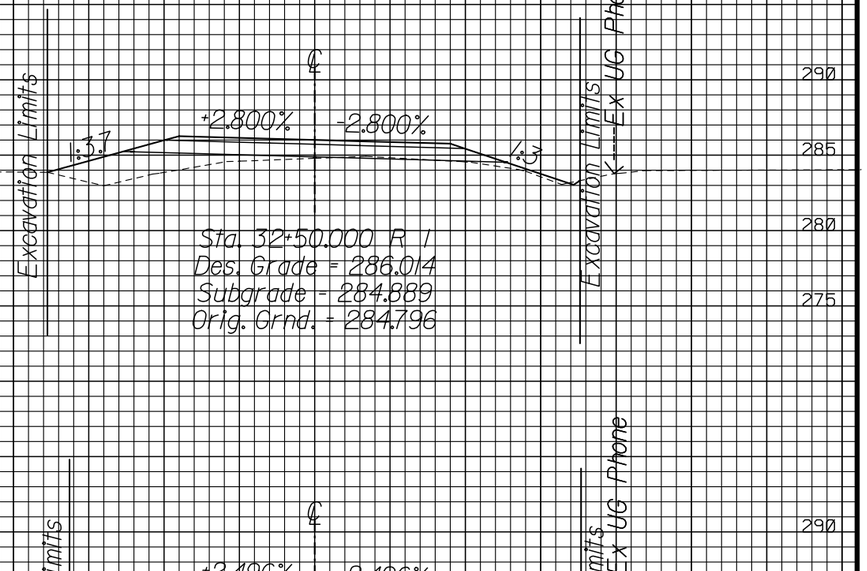
28+00.000 TO 30+00.000

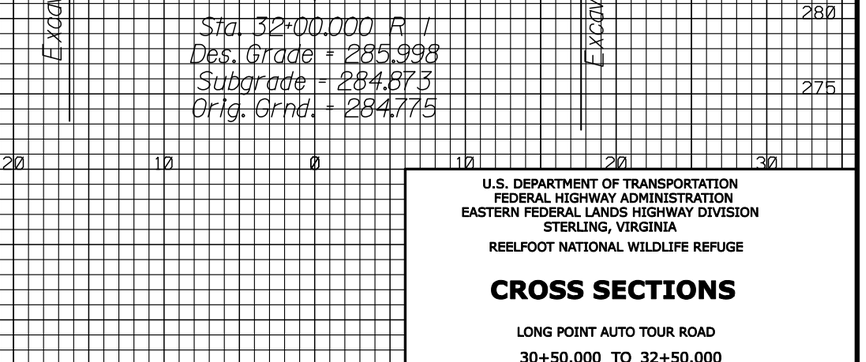
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T10











U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

30+50.000 TO 32+50.000

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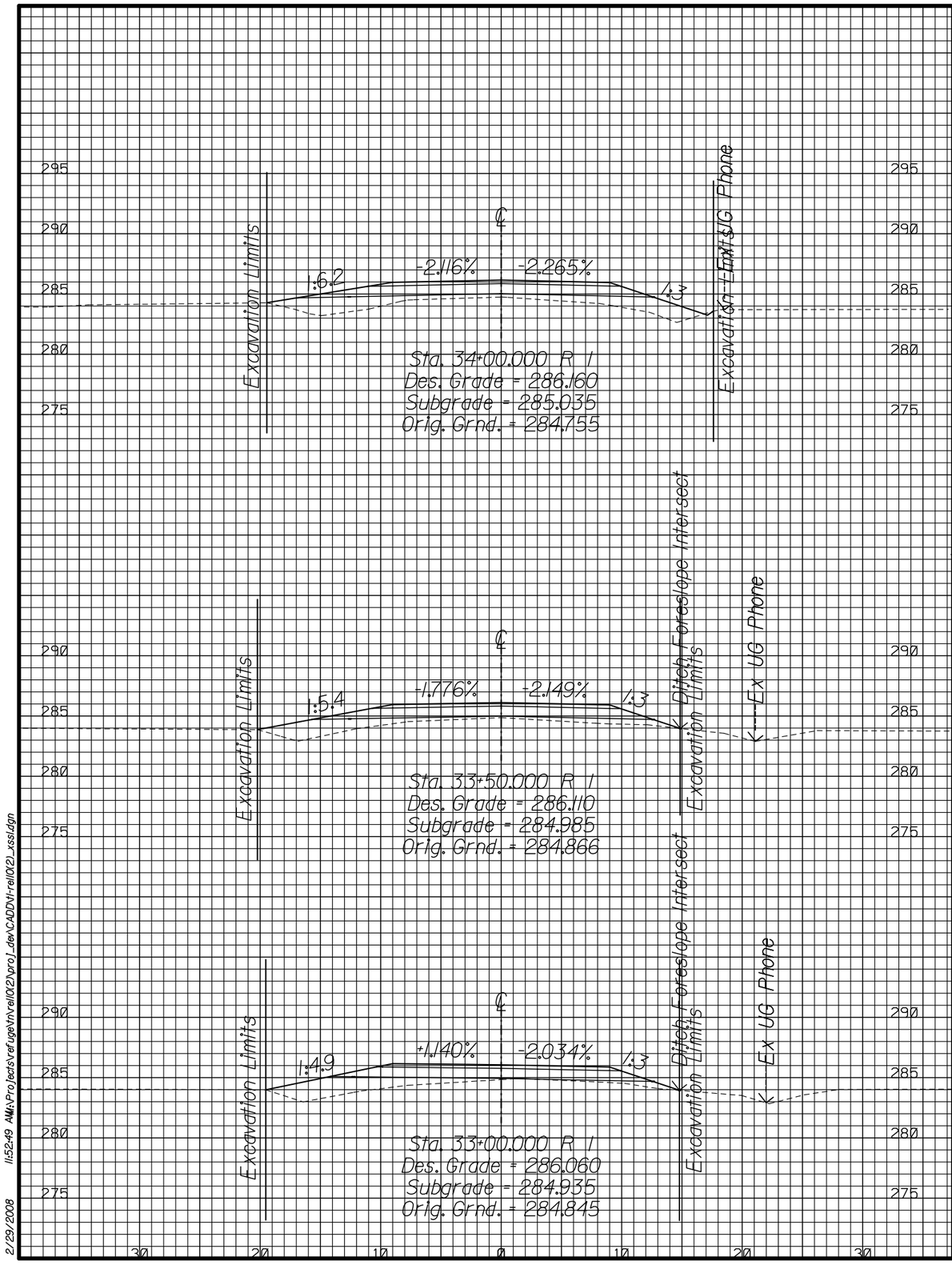
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T11



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

33+00.000 TO 35+00.000

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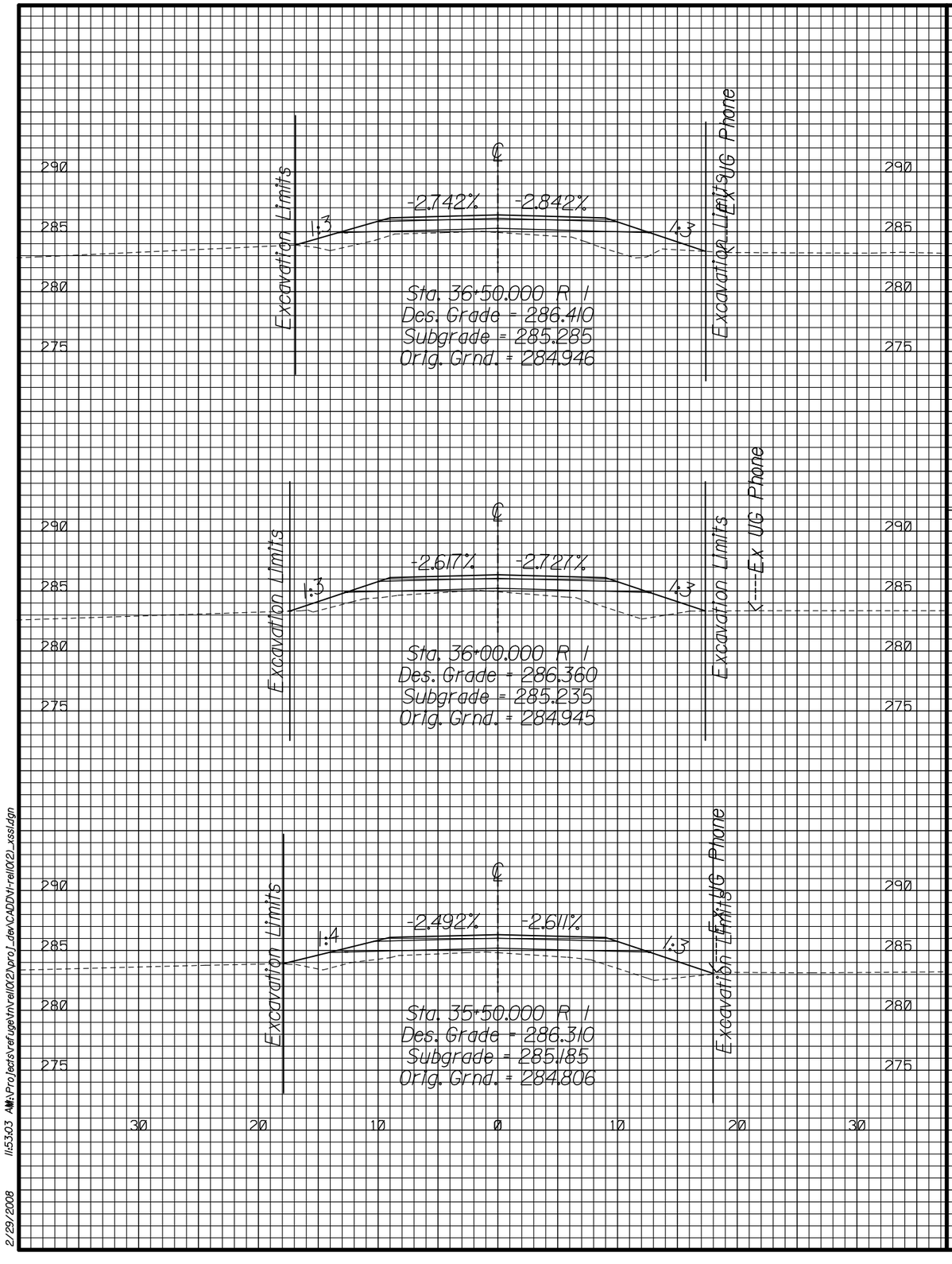
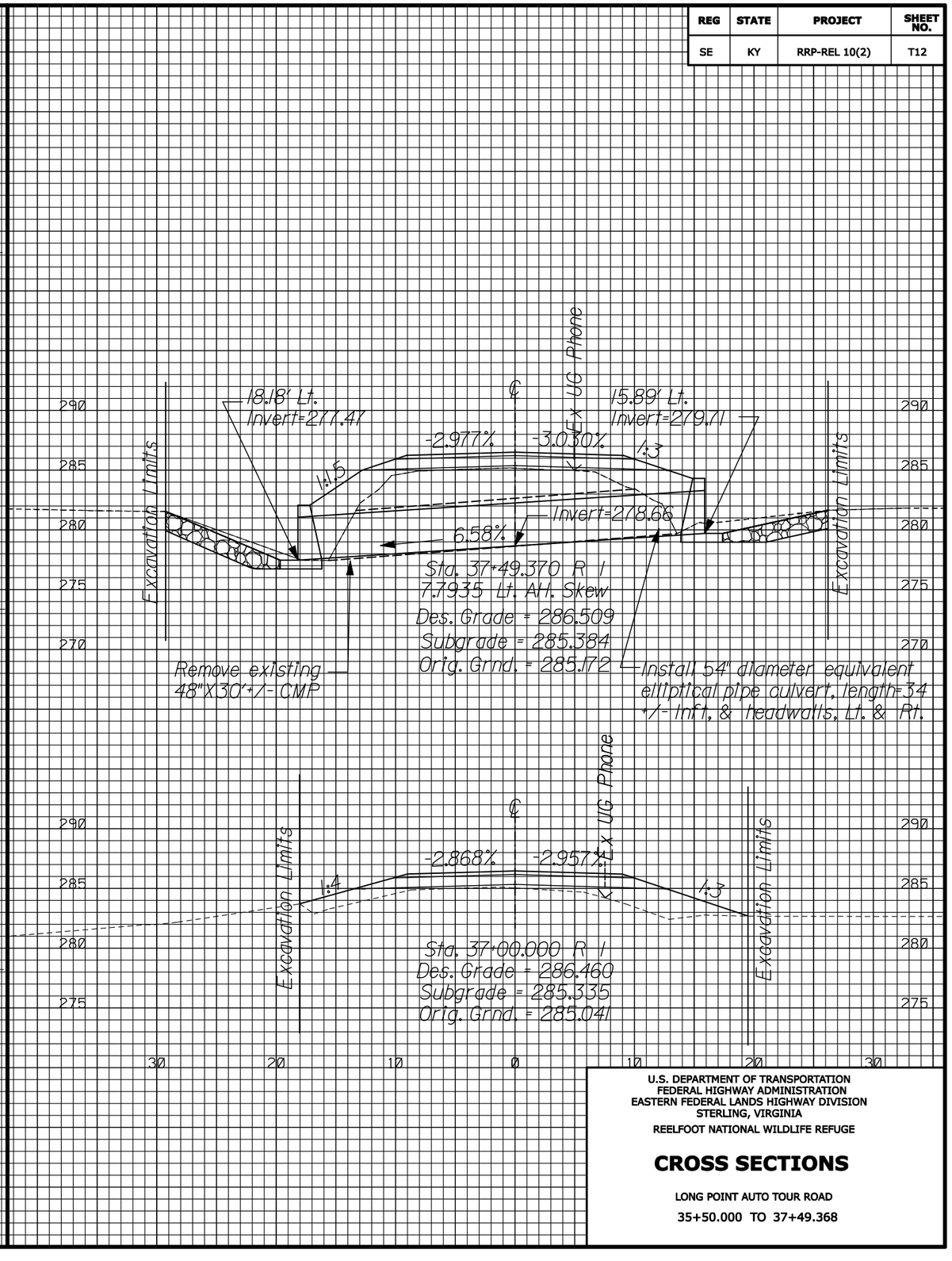
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T12





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

35+50.000 TO 37+49.368

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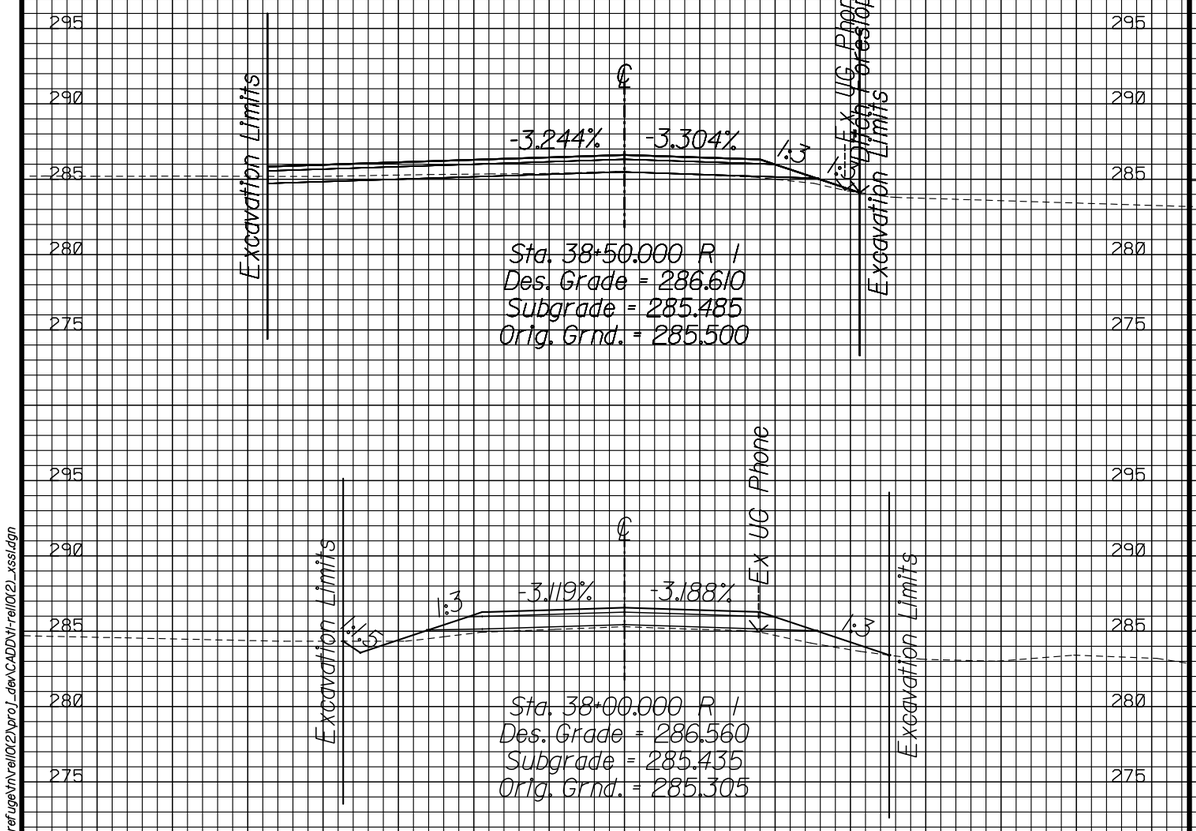
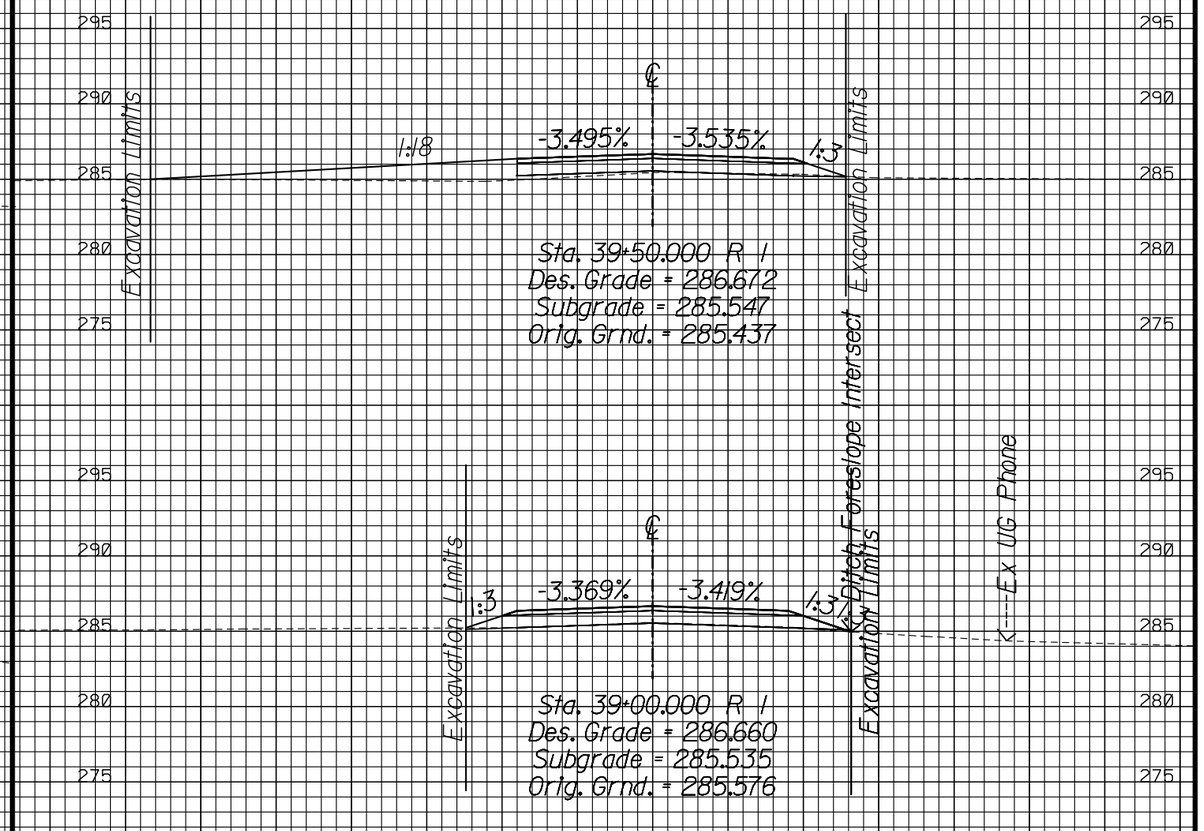
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T13





U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

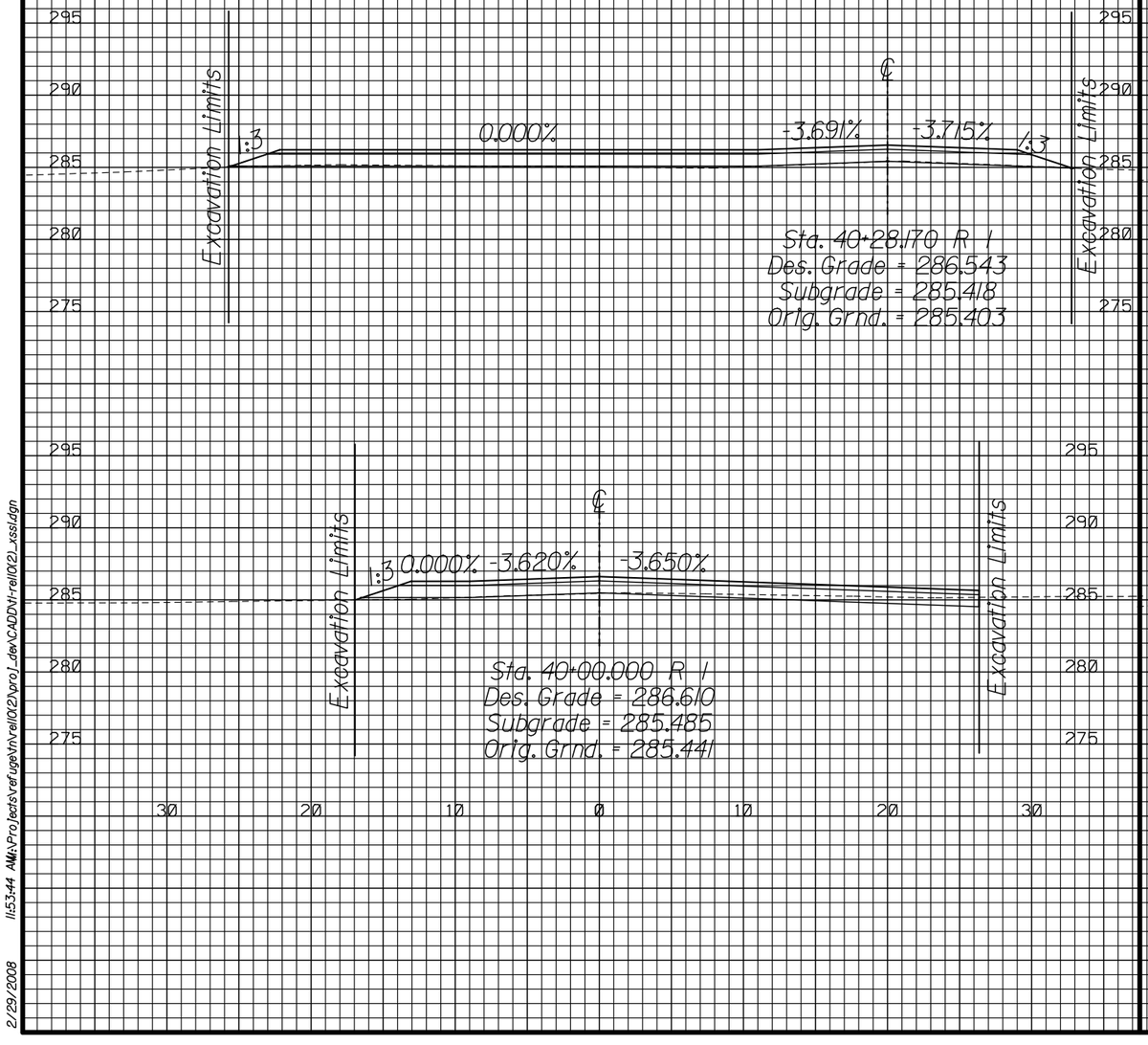
CROSS SECTIONS

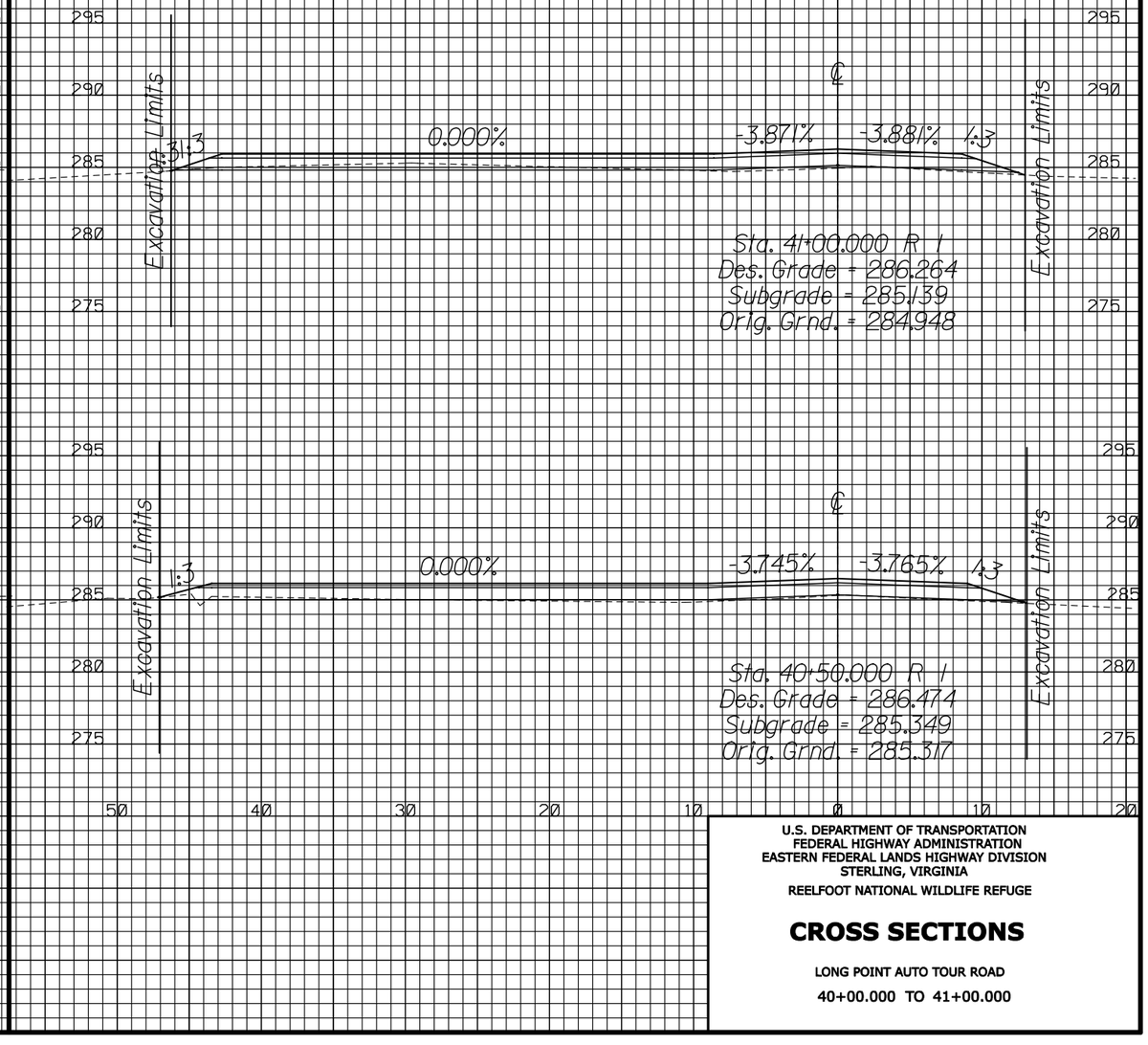
LONG POINT AUTO TOUR ROAD

38+00.000 TO 39+50.000

2/29/2008 11:53:28 AM \\Projects\ref_uge\tnrell02\2proj_dev\CADD\tnrell02(2)_xssl.dgn

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T14





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STERLING, VIRGINIA

REELFOOT NATIONAL WILDLIFE REFUGE

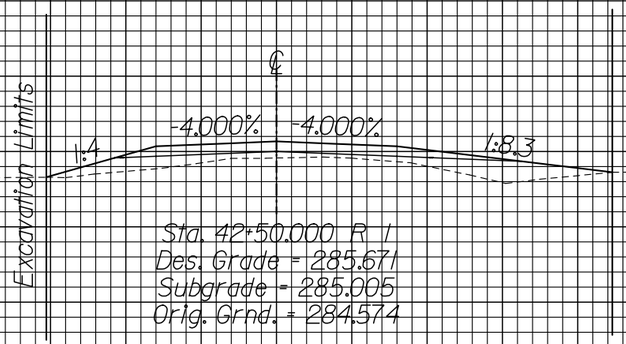
CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

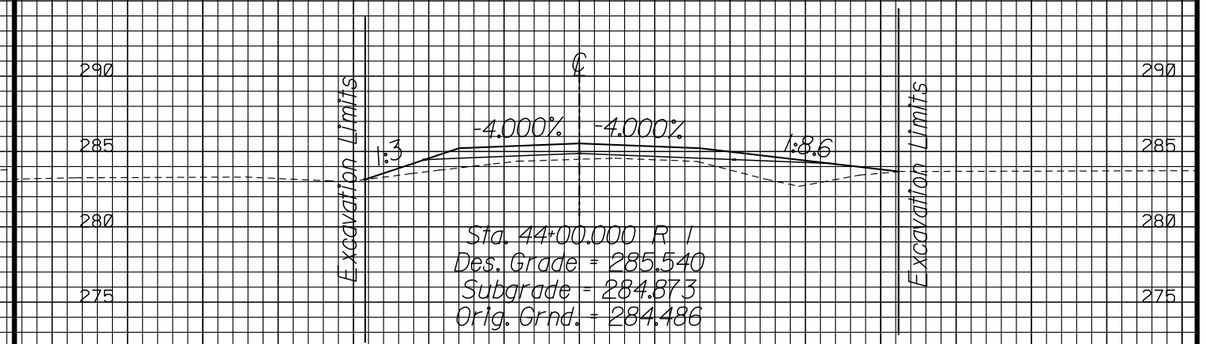
40+00.000 TO 41+00.000

2/29/2008 11:53:44 AM\\Projects\refuge\tnrefl02\pro1_dev\CADD\tnrefl02(2)_xssl.dgn

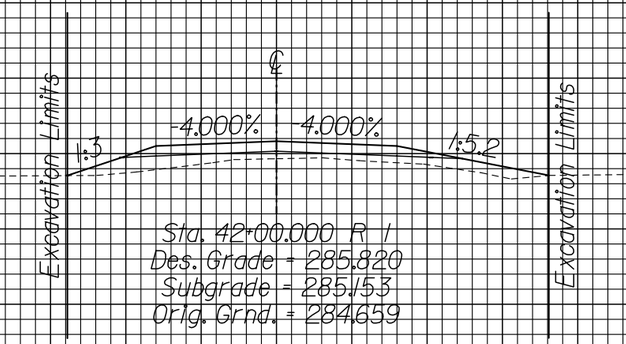
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T15



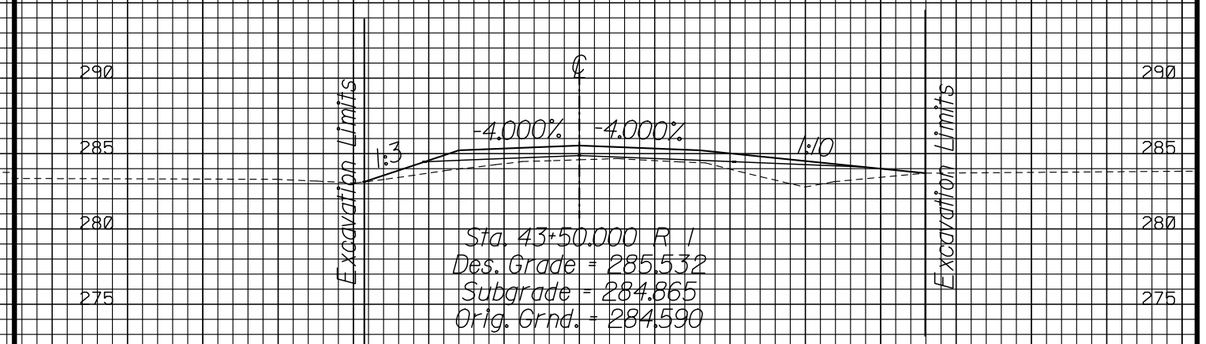
Sta. 42+50.000 R / I
Des. Grade = 285.671
Subgrade = 285.005
Orig. Grnd. = 284.574



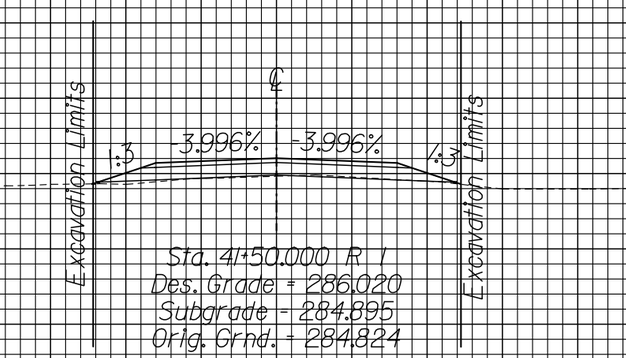
Sta. 44+00.000 R / I
Des. Grade = 285.540
Subgrade = 284.873
Orig. Grnd. = 284.486



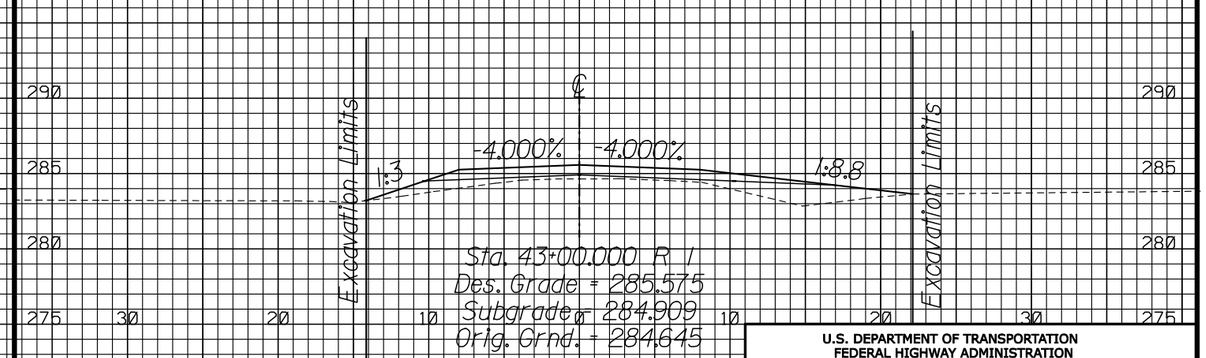
Sta. 42+00.000 R / I
Des. Grade = 285.820
Subgrade = 285.153
Orig. Grnd. = 284.659



Sta. 43+50.000 R / I
Des. Grade = 285.532
Subgrade = 284.865
Orig. Grnd. = 284.590



Sta. 41+50.000 R / I
Des. Grade = 286.020
Subgrade = 284.895
Orig. Grnd. = 284.824



Sta. 43+00.000 R / I
Des. Grade = 285.575
Subgrade = 284.909
Orig. Grnd. = 284.645

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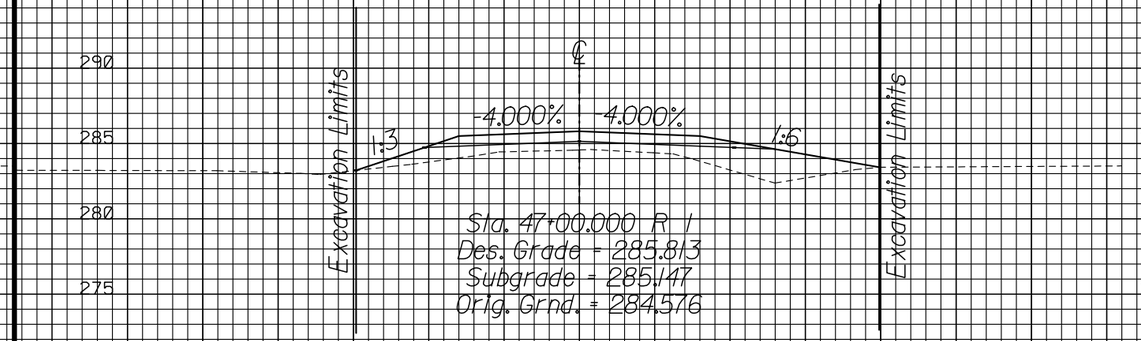
CROSS SECTIONS

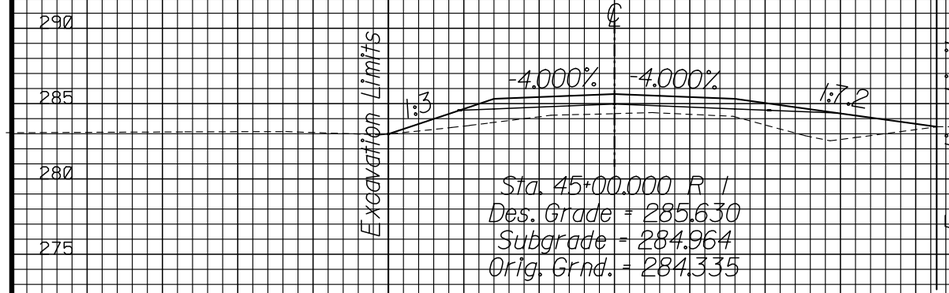
LONG POINT AUTO TOUR ROAD

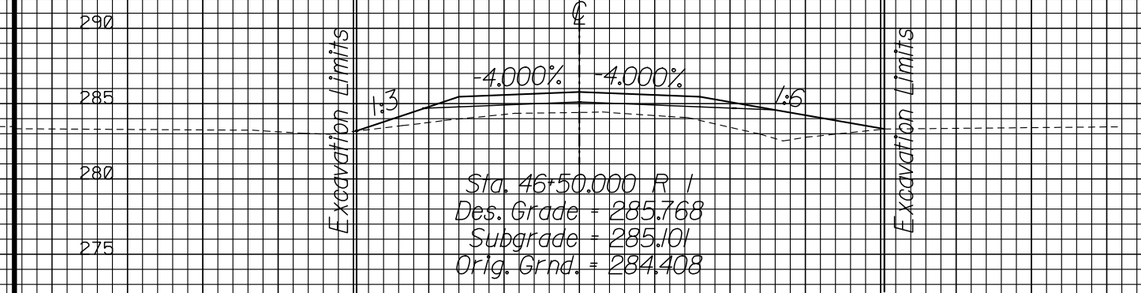
41+50.000 TO 44+00.000

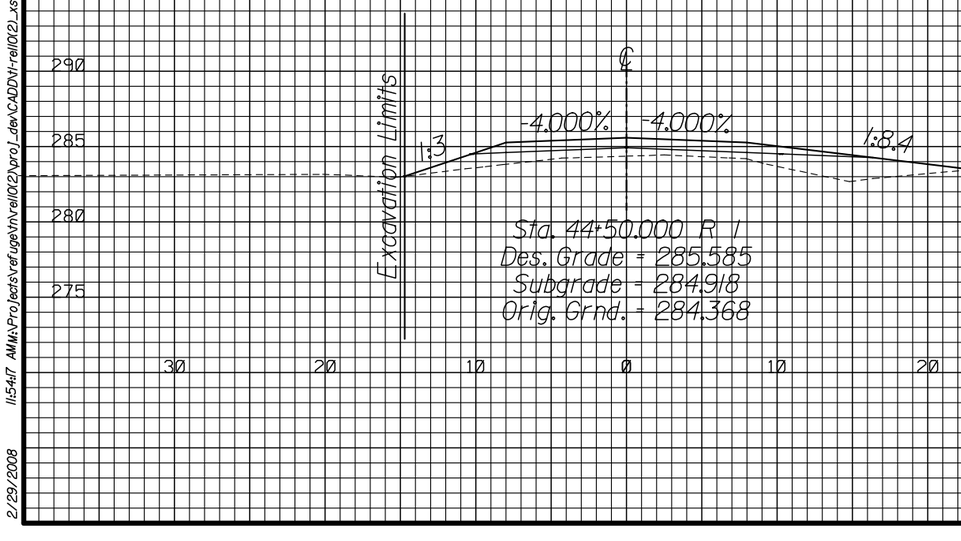
2/29/2008 11:54:02 AM\\Projects\refuge\tnrefl(02)\proj_dev\CADD\tnrefl(02)_xssl.dgn

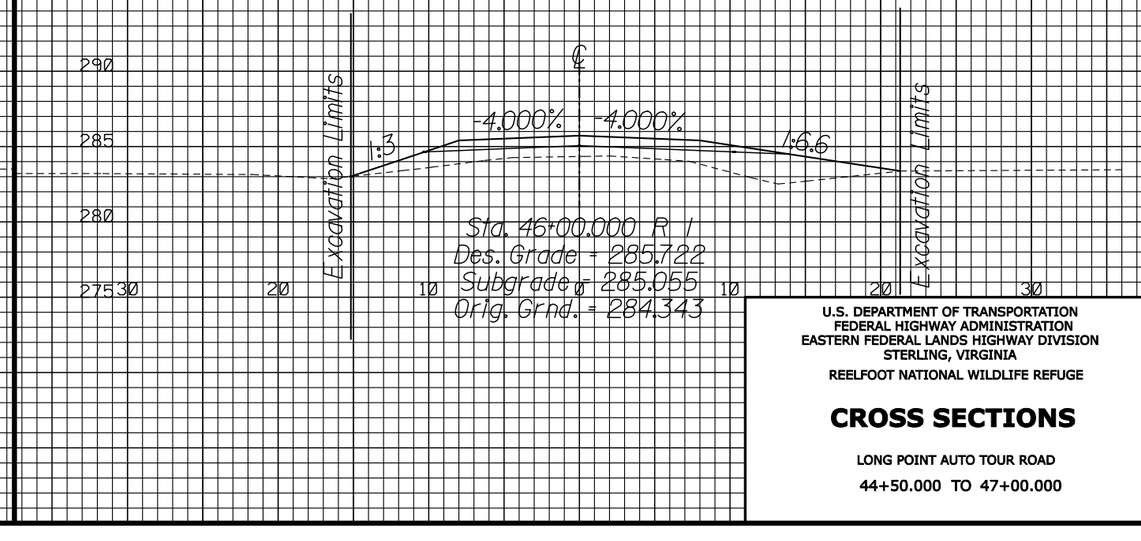
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T16











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CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

44+50.000 TO 47+00.000

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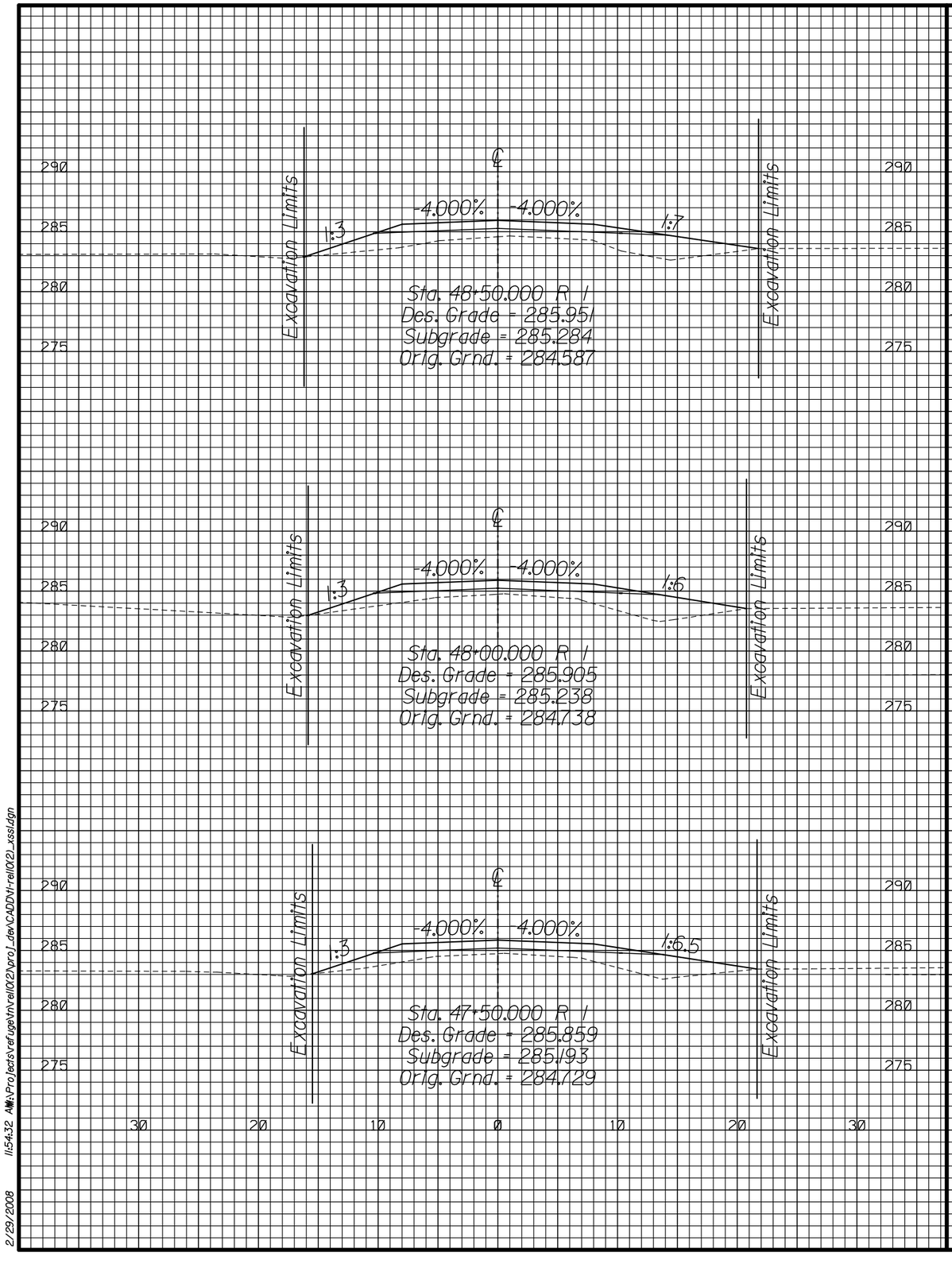
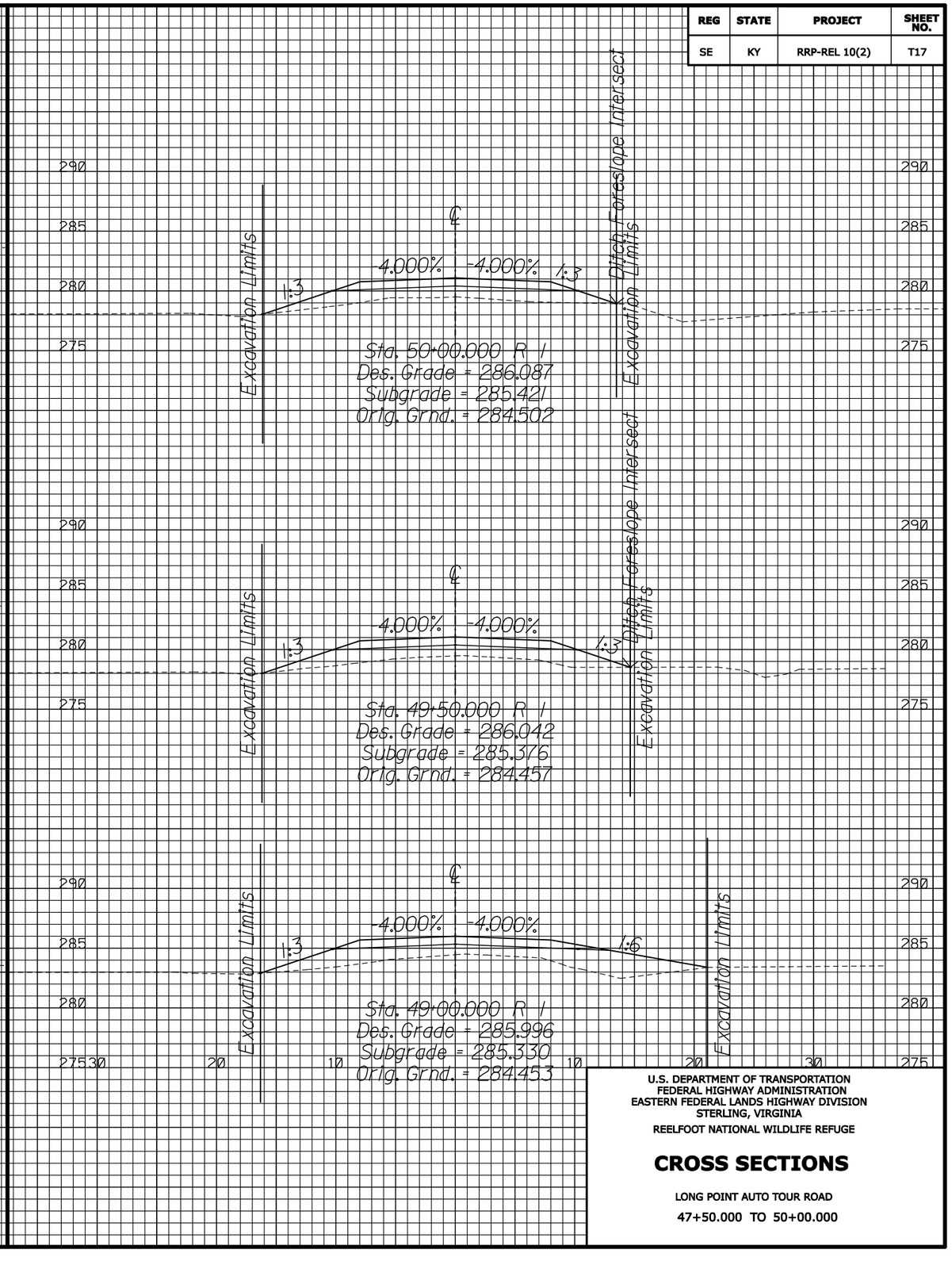
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T17





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REELFOOT NATIONAL WILDLIFE REFUGE

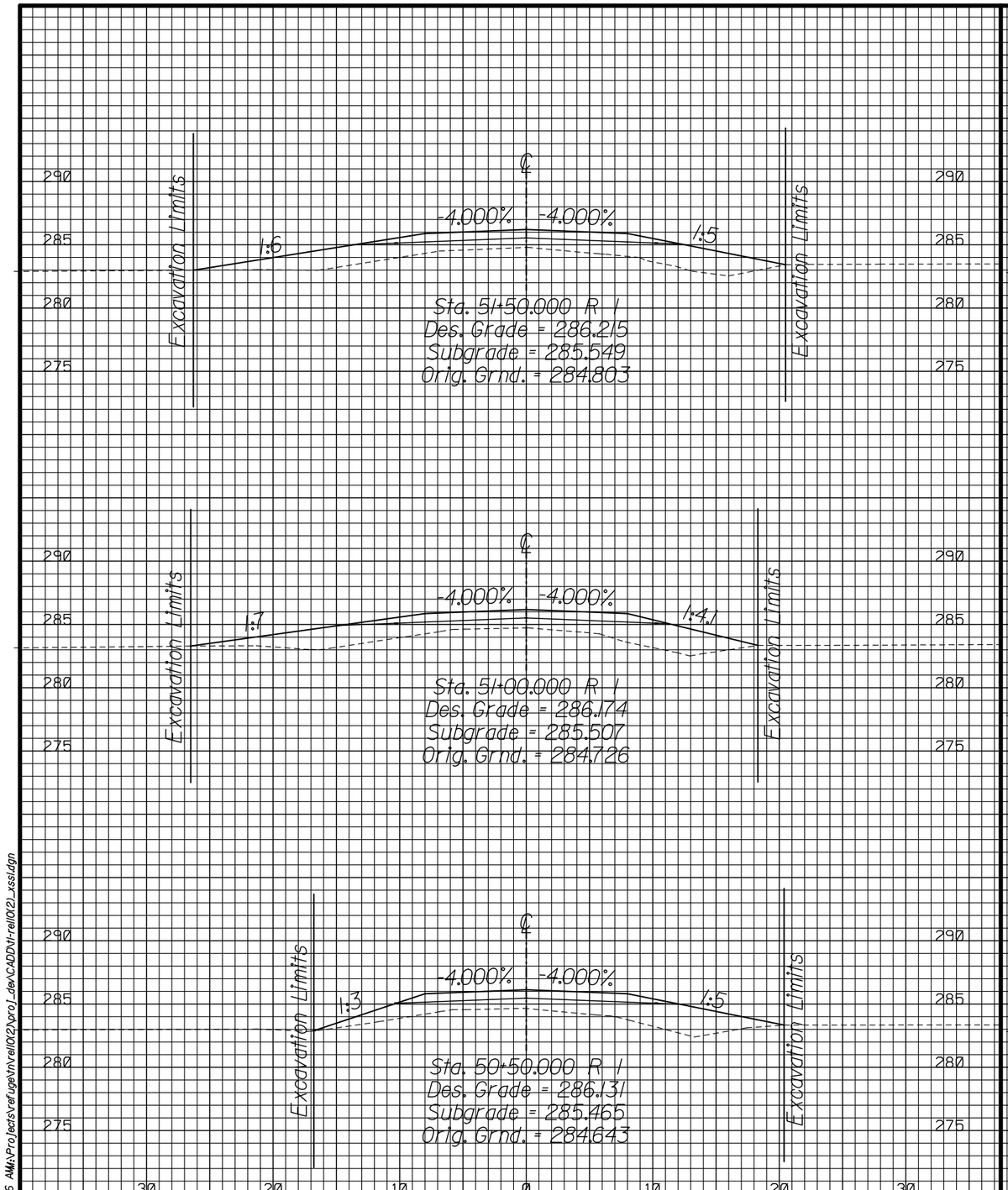
CROSS SECTIONS

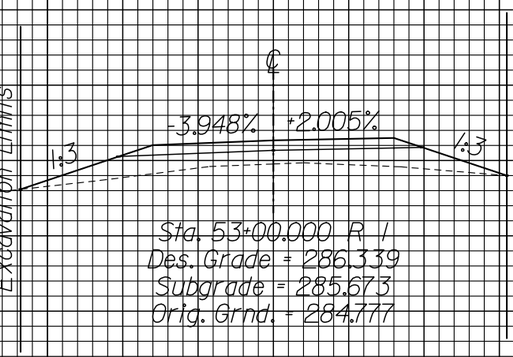
LONG POINT AUTO TOUR ROAD

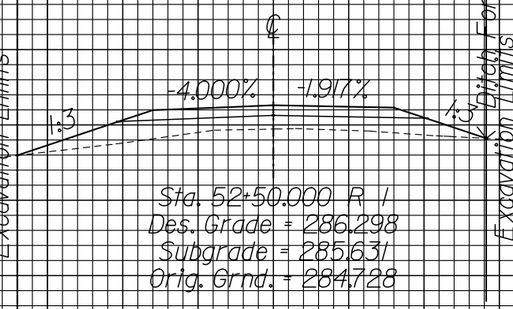
47+50.000 TO 50+00.000

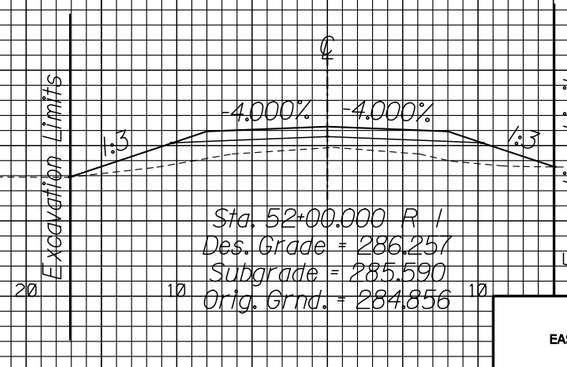
2/29/2008 11:54:32 AM \Projects\refuge\tnrefl(02)\proj_dev\CADD\tnrefl(02)_xssl.dgn

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T18









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CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

50+50.000 TO 53+00.000

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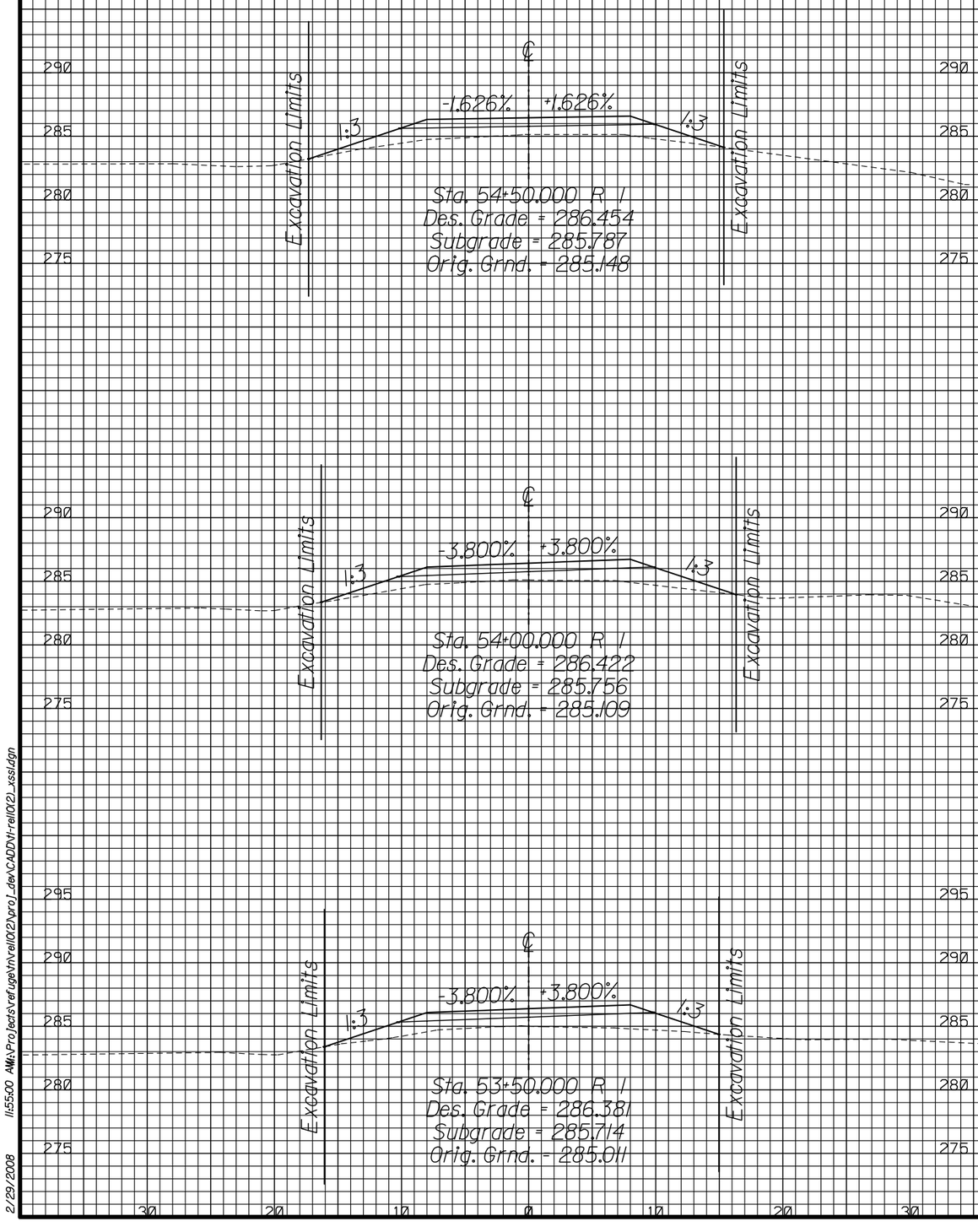
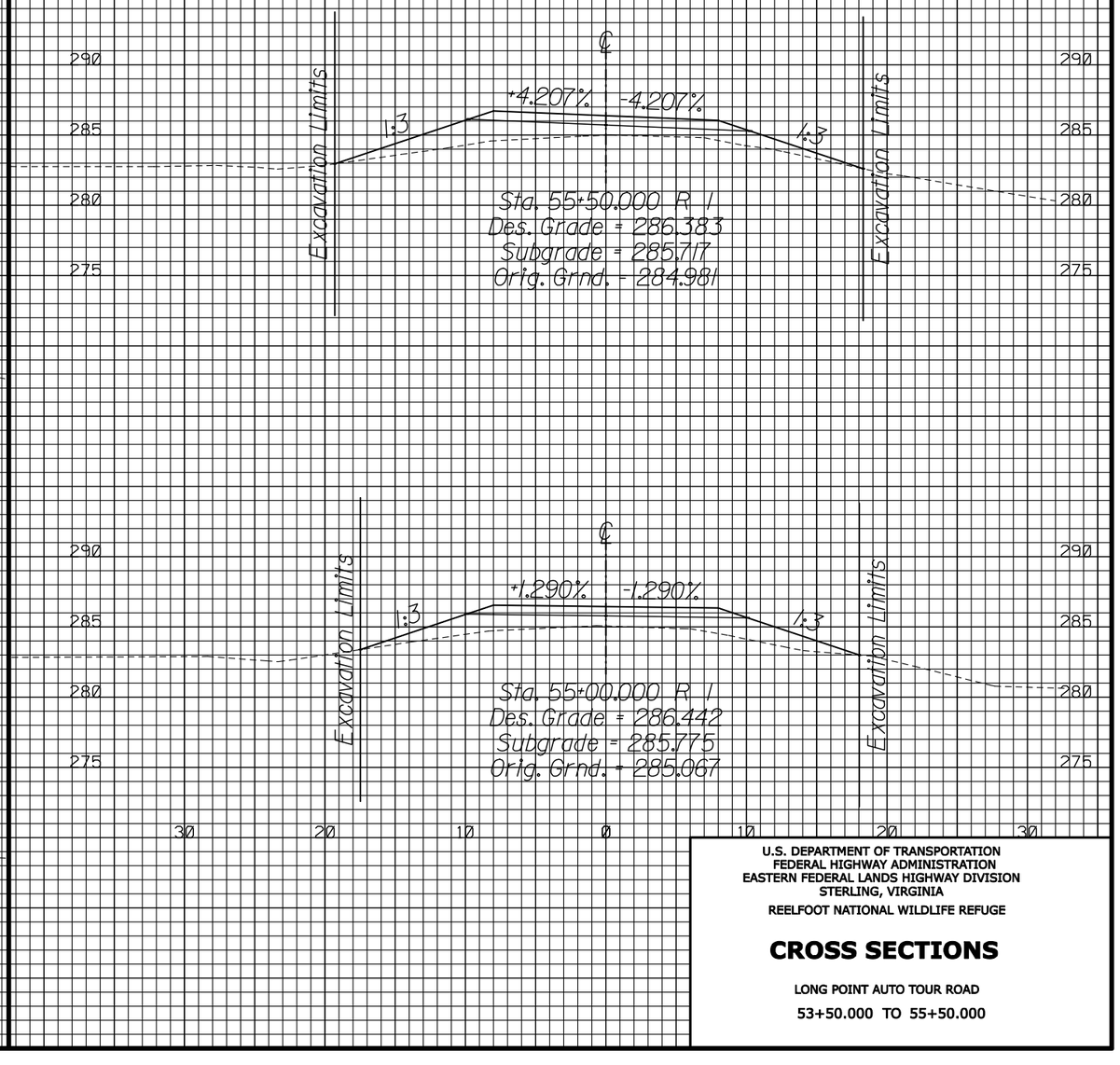
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T19





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CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

53+50.000 TO 55+50.000

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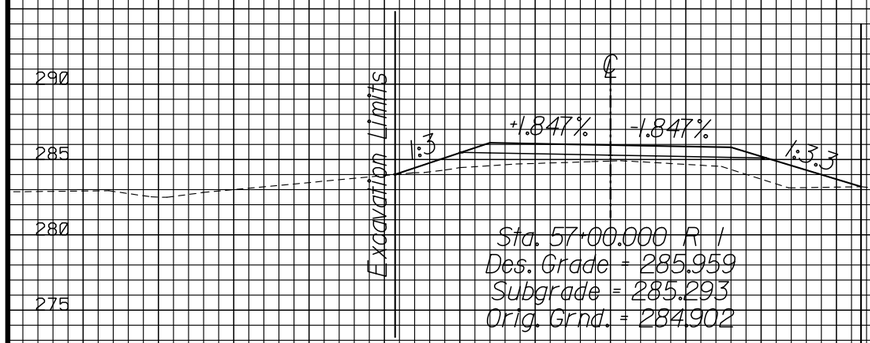
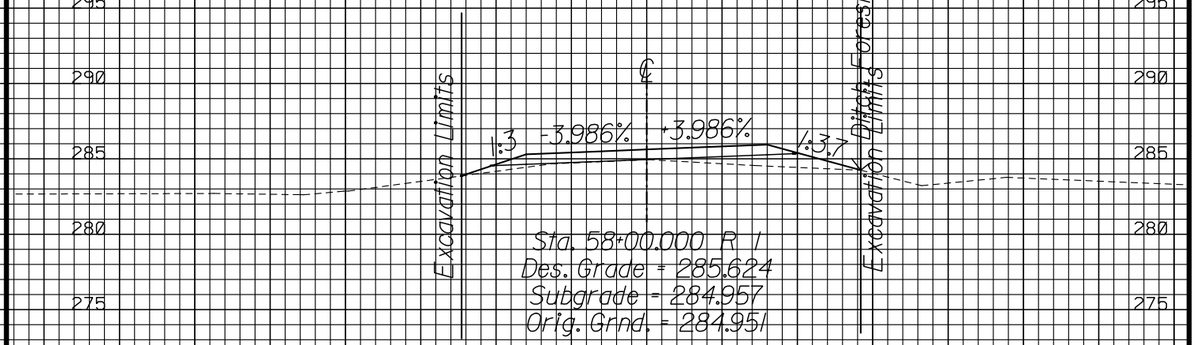
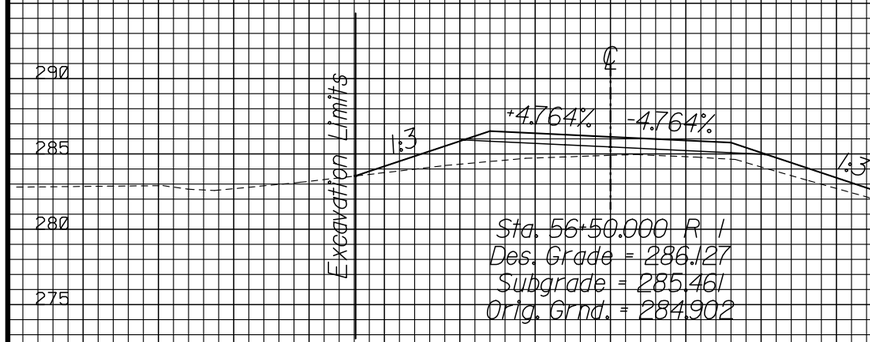
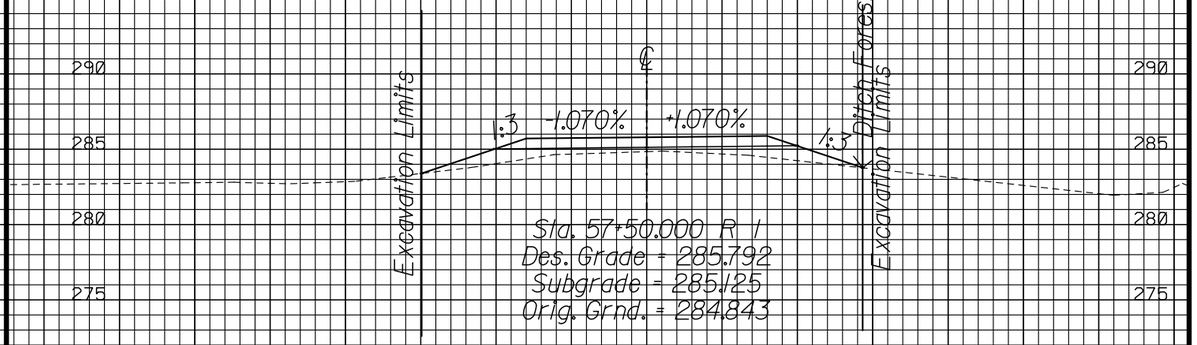
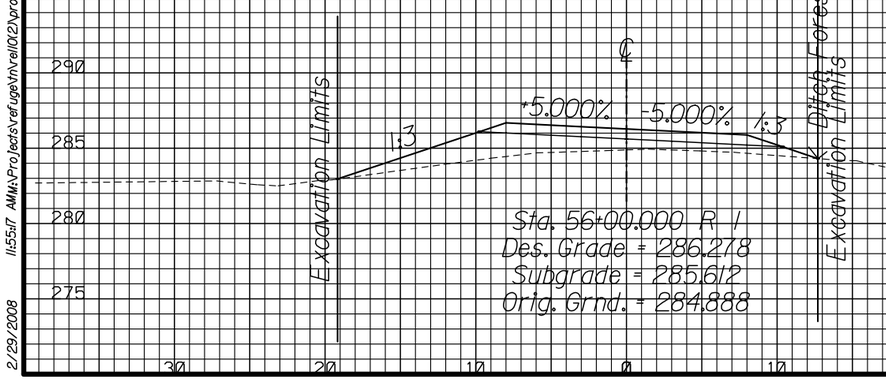
REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T20











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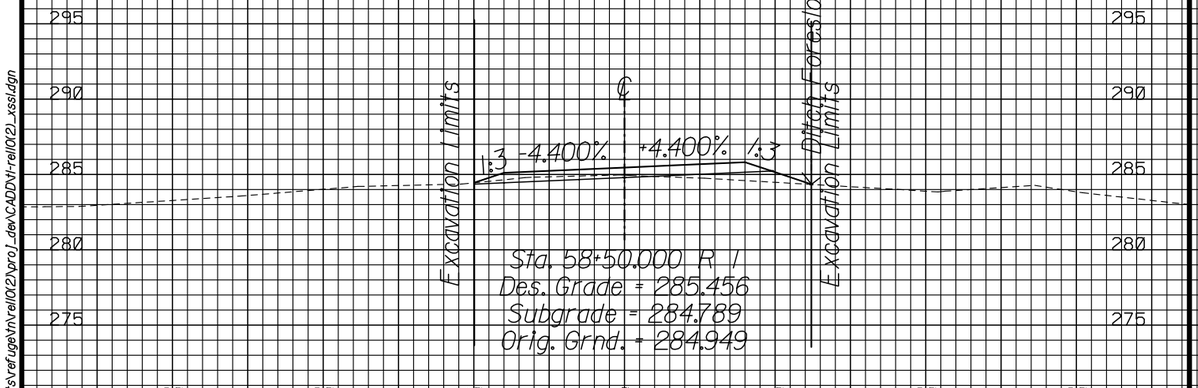
REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

56+00.000 TO 58+00.000

REG	STATE	PROJECT	SHEET NO.
SE	KY	RRP-REL 10(2)	T21



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REELFOOT NATIONAL WILDLIFE REFUGE

CROSS SECTIONS

LONG POINT AUTO TOUR ROAD

58+50.000 TO 58+50.000

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